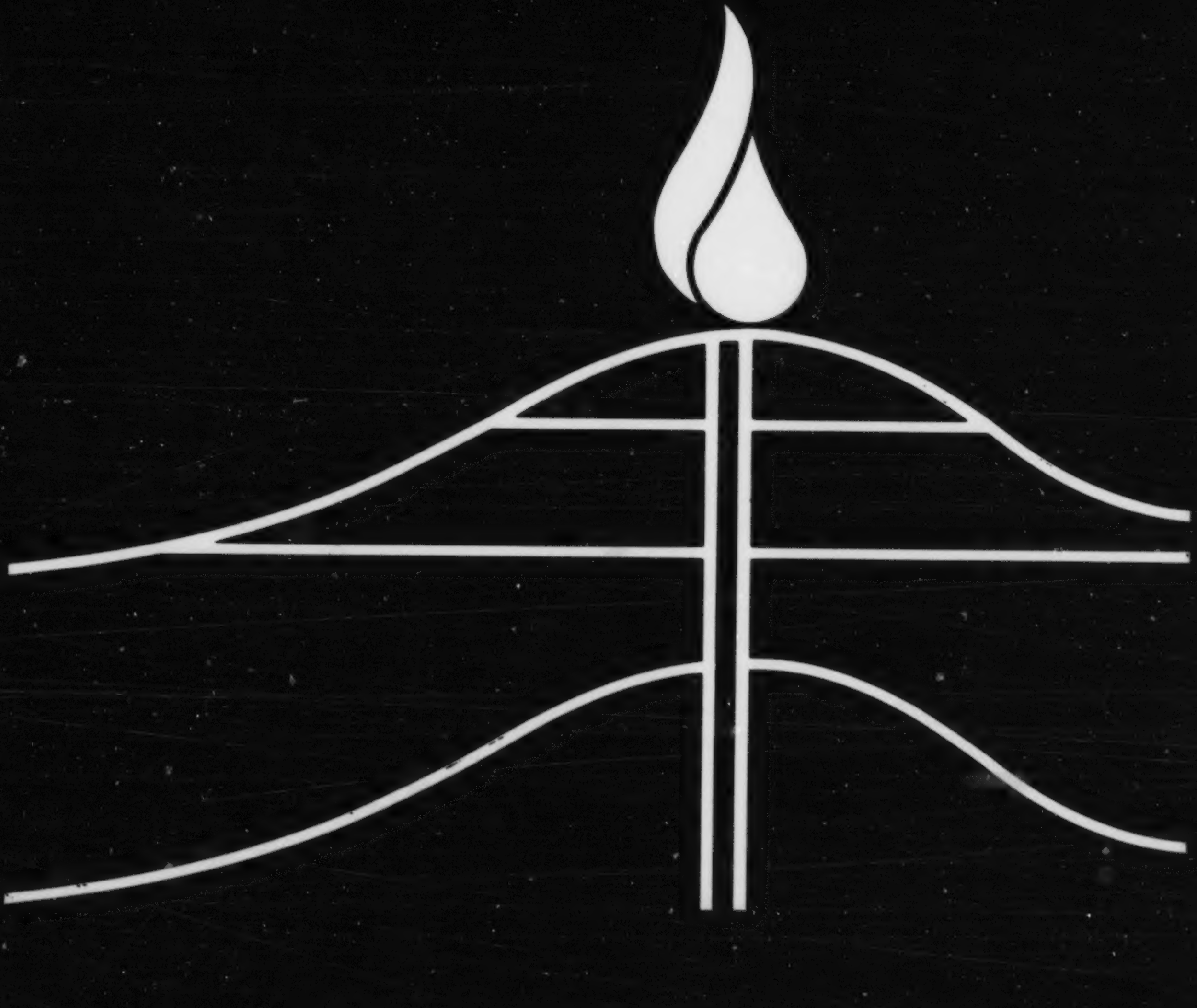
Saskatchewan
Energy and Mines

# Reservoir Annual 1986

Miscellaneous Report 87-1

ISSN 0702-2562

Saskatchewan



# PREFACE

The 1986 Reservoir Annual has been compiled to consolidate pertinent information on all oil and gas reservoirs in Saskatchewan into a convenient reference manual. The main sections of the report contain oil and gas reserves data, development and producing data and information concerning enhanced recovery projects. The remaining sections present related reservoir information.

Publication of the Reservoir Annual commenced in 1963 and has since undergone a number of changes to improve the presentation and to increase the amount of information that is useful to both industry and government.

I would like to acknowledge the assistance of the oil and gas companies operating in Saskatchewan for submitting to the department much of the material that has been used in the preparation of this report.

Patricia A. Smith
Minister of Energy and Mines

Although the Department of Energy and Mines has exercised all reasonable care in the compilation, interpretation and production of this report, it is not possible to ensure total accuracy, and all persons who rely on the information contained herein do so at their own risk. The Department of Energy and Mines and the Government of Saskatchewan do not accept liability for any errors, omissions or inaccuracies that may be included in, or derived from, this report.

# TABLE OF CONTENTS

SECTION

INTRODUCTON .......................................................... A

POOL AND AREA MAPS .................................................. B

- Saskatchewan Oil and Gas Pools
- Production and Disposition Areas
- Pool Location Maps

RESERVOIR DATA RESERVES AND PRODUCTION – OIL .................... C

- Five Year Oil Summary
- Area I – Heavy
- Area II – Heavy
- Area II – Light
- Area III – Medium
- Area IV – Medium
- Area IV – Light

RESERVOIR DATA RESERVES AND PRODUCTION – GAS .................... D

- Five Year Gas Summary
- Non-Associated Gas
- Associated Gas
- Dissolved Gas

OIL AND GAS UNITS AND ENHANCED RECOVERY PROJECTS ............... E

- Oil and Gas Units
- Non-Unit Projects

DEVELOPMENT DATA ..................................................... F

- Oil Pools
- Gas Pools
- Spacing Areas

TYPICAL WELL LOGS OF PRODUCING ZONES ............................ G

POOL PRESSURE DATA .................................................. H

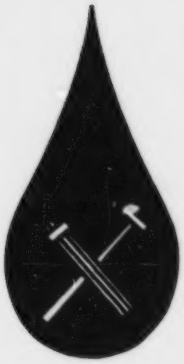
- Oil Pools
- Gas Pools

MPR FACTORS ........................................................... I

GAS PLANT PERFORMANCE GRAPHS ..................................... J

FORMATION WATER RESISTIVITY ....................................... K

# INTRODUCTION



# INTRODUCTION

The 1986 Reservoir Annual is published by Saskatchewan Energy and Mines to provide current statistical information with regard to performance and reservoir parameters of Saskatchewan oil and gas pools. The 1986 edition is subdivided into eleven sections, each dealing with a specific type of reservoir data. Section B presents maps showing oil and gas pools, production and disposition areas, well spacing areas and other related information. Of considerable importance are sections C and D, which provide reservoir data and reserves for all provincial oil and gas pools broken down by unit and non-unit areas. Section E contains a listing of oil and gas units and provides such information as operator, producing zone, number of active wells and project data such as pattern type, commencement date and injection rates. The section titled "Development Data" presents information on natural depletion mechanism, enhanced recovery projects, well spacing and target areas for all Saskatchewan oil and gas pools. The remaining five sections include illustrations of typical producing well logs, pool pressure data, Maximum Permissive Rate factors, gas plant performance plots and formation water resistivity measurements. All reserve, production, pool boundary and well spacing information contained in this publication is as of December 31, 1986, unless otherwise noted.

The reserve values contained in the Reservoir Annual are "established reserves" as adopted from the recommendations of The Joint Industry/Government Task Force on Uniform Reserves Terminology. Established reserves are defined as those reserves recoverable under current technology and present and anticipated economic conditions, specifically proved by drilling, testing or production, plus that judgement portion of contiguous recoverable reserves that are interpreted to exist from geological, geophysical or similar information, with reasonable certainty.

Provincial oil production in 1986 was 11.7 million cubic metres, about the same as the previous year. This reflects a continuation of good oil market conditions, and a reasonable level of exploration and development activity. Initial recoverable oil reserves increased by nearly 13.9 million cubic metres due to the addition of 898 new producing oil wells and 10 new or expanded waterflood projects. This was reduced to a net increase of about 11.5 million cubic metres because of better definition of existing reserves. The most significant increase in reserves due to drilling was in Area IV (Weyburn-Estevan). Provincial reserve increases were slightly less than production for the year, resulting in a remaining reserve figure of 111.7 million cubic metres at year end. Table 1 provides a more detailed look at changes in oil reserves for the year.

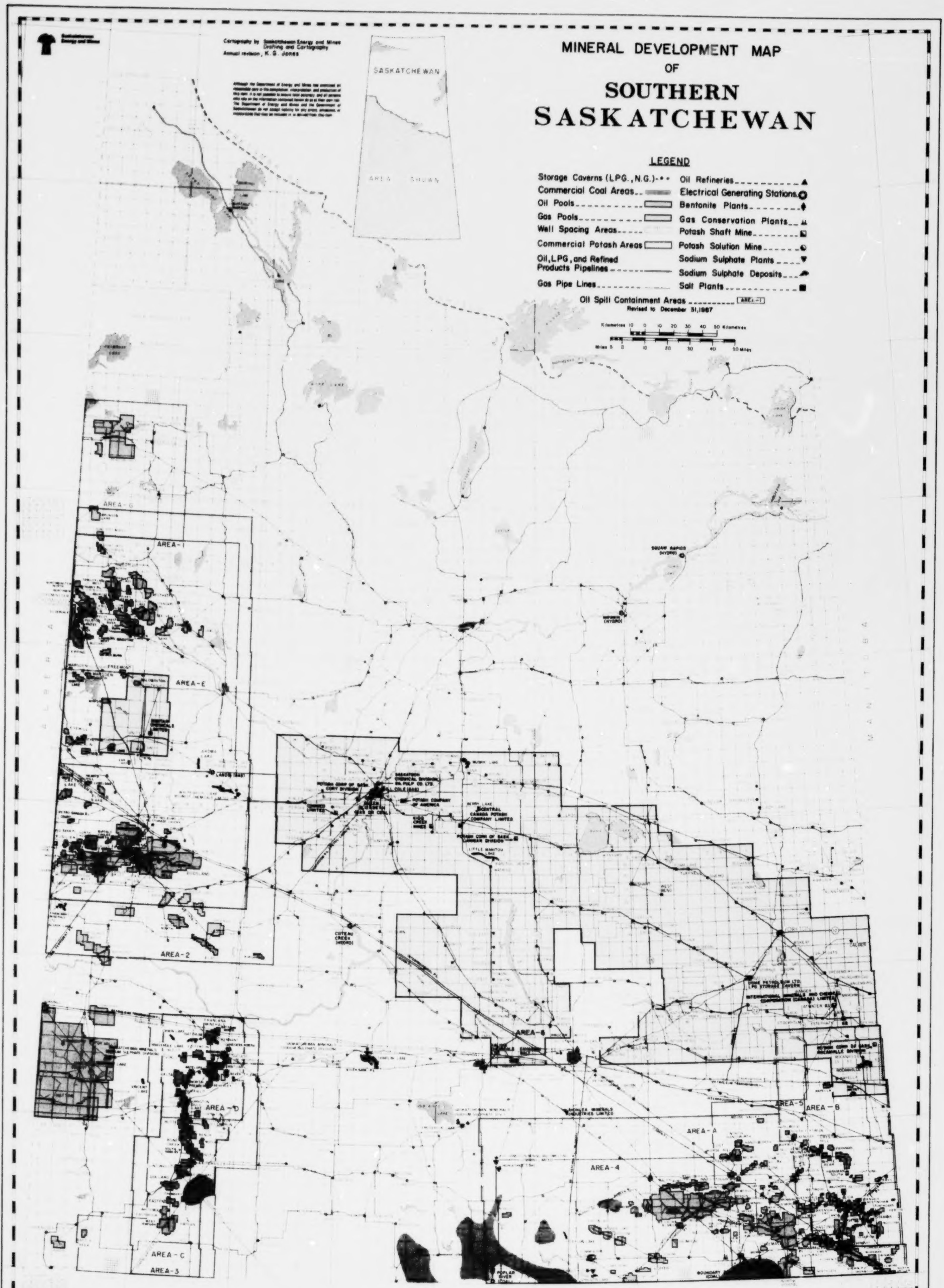
Natural gas production in 1986 was 2.29 billion cubic metres, exceeding the 1985 production by 20%. Initial reserves of gas were increased by 6.57 billion cubic metres in 1986, resulting in a net increase of 4.28 billion cubic metres and a remaining reserves year-end value of 67.55 billion cubic metres. These reserve increases were largely due to the continued high rate of gas well drilling, which resulted in 233 completions in 1986.

The objective of this publication is to provide subscribers in the oil and gas industry with reliable and pertinent information on provincial oil and gas resources and any suggestions or comments on improvements in this regard would be welcomed by Saskatchewan Energy and Mines.

# TABLE 1
# REMAINING OIL RESERVES IN SASKATCHEWAN
## (Million Cubic Metres)

| Area | Remaining Established Reserves (Dec. 31/85) | 1986 Additions to Reserves | | | 1986 Production | Net Change in Reserves During 1986 | Remaining Established Reserves (Dec. 31/86) |
|---|---|---|---|---|---|---|---|
| | | Revisions | Drilling | Total | | | |
| Area I – Heavy | 28.074 | −1.473 | +0.846 | −0.627 | 2.956 | −3.583 | 24.491 |
| Area II – Heavy | 8.180 | +0.084 | +0.170 | +0.254 | 0.766 | −0.512 | 7.668 |
| Area II – Light | 9.137 | +3.232 | +0.745 | +3.977 | 1.208 | +2.769 | 11.906 |
| Area III – Medium | 15.205 | +1.971 | +0.385 | +2.356 | 1.757 | +0.599 | 15.804 |
| Area IV – Medium | 24.186 | −0.555 | +2.950 | +2.395 | 2.140 | +0.255 | 24.441 |
| Area IV – Light | 27.144 | −0.729 | +3.846 | +3.117 | 2.842 | +0.275 | 27.419 |
| PROVINCIAL TOTAL | 111.926 | +2.530 | +8.942 | +11.472 | 11.669 | −0.197 | 111.729 |

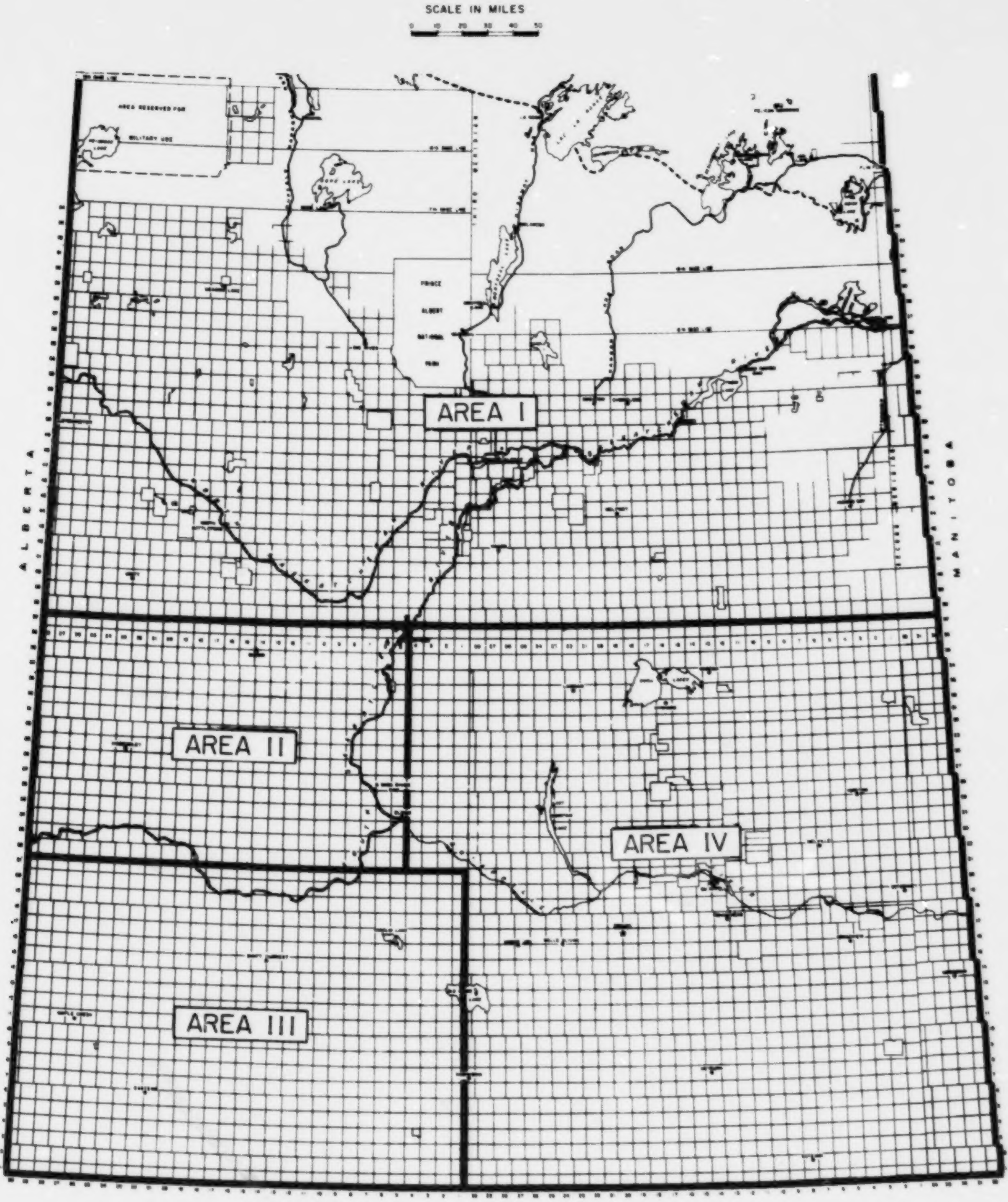
# POOL AND AREA MAPS

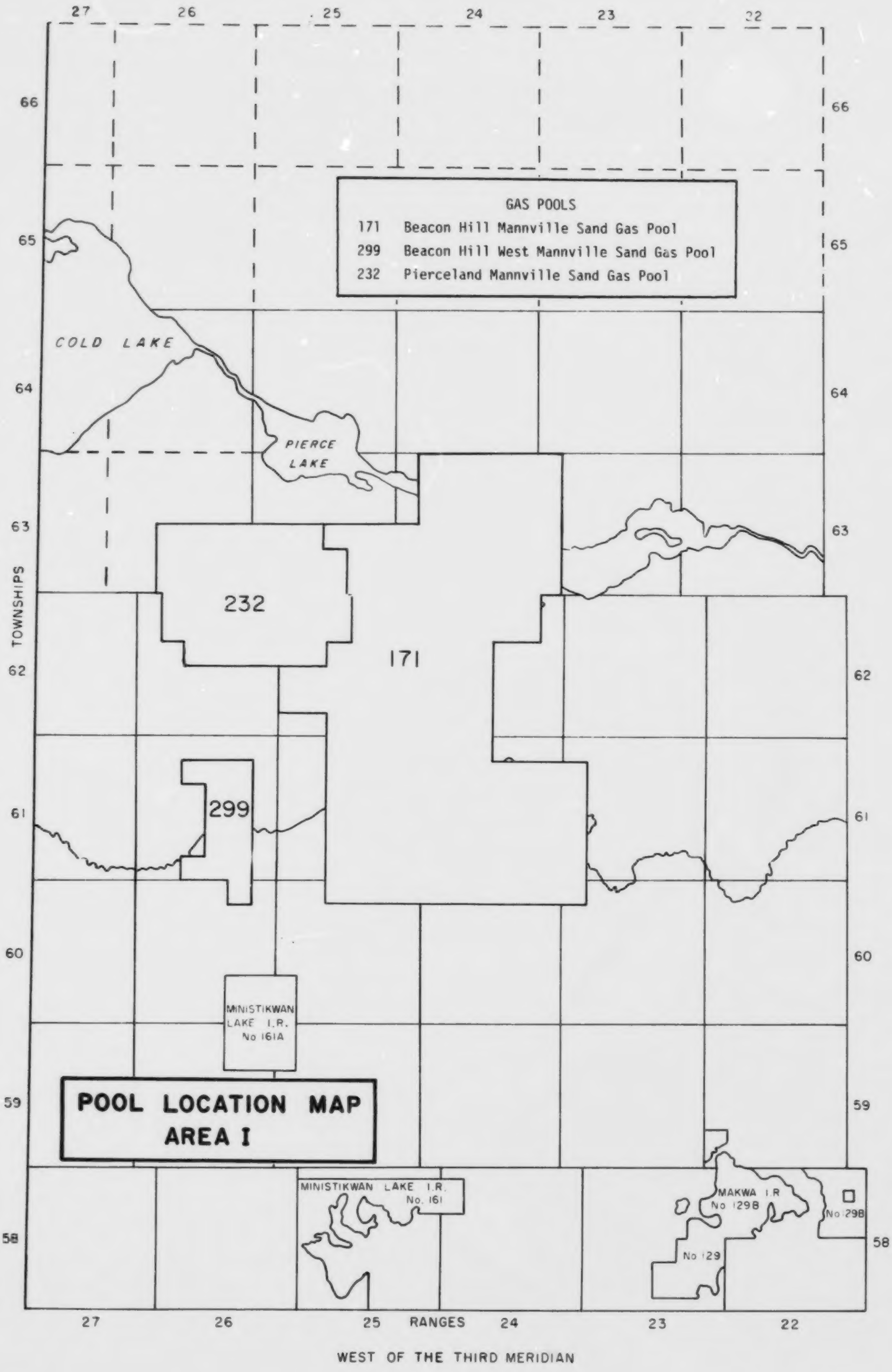


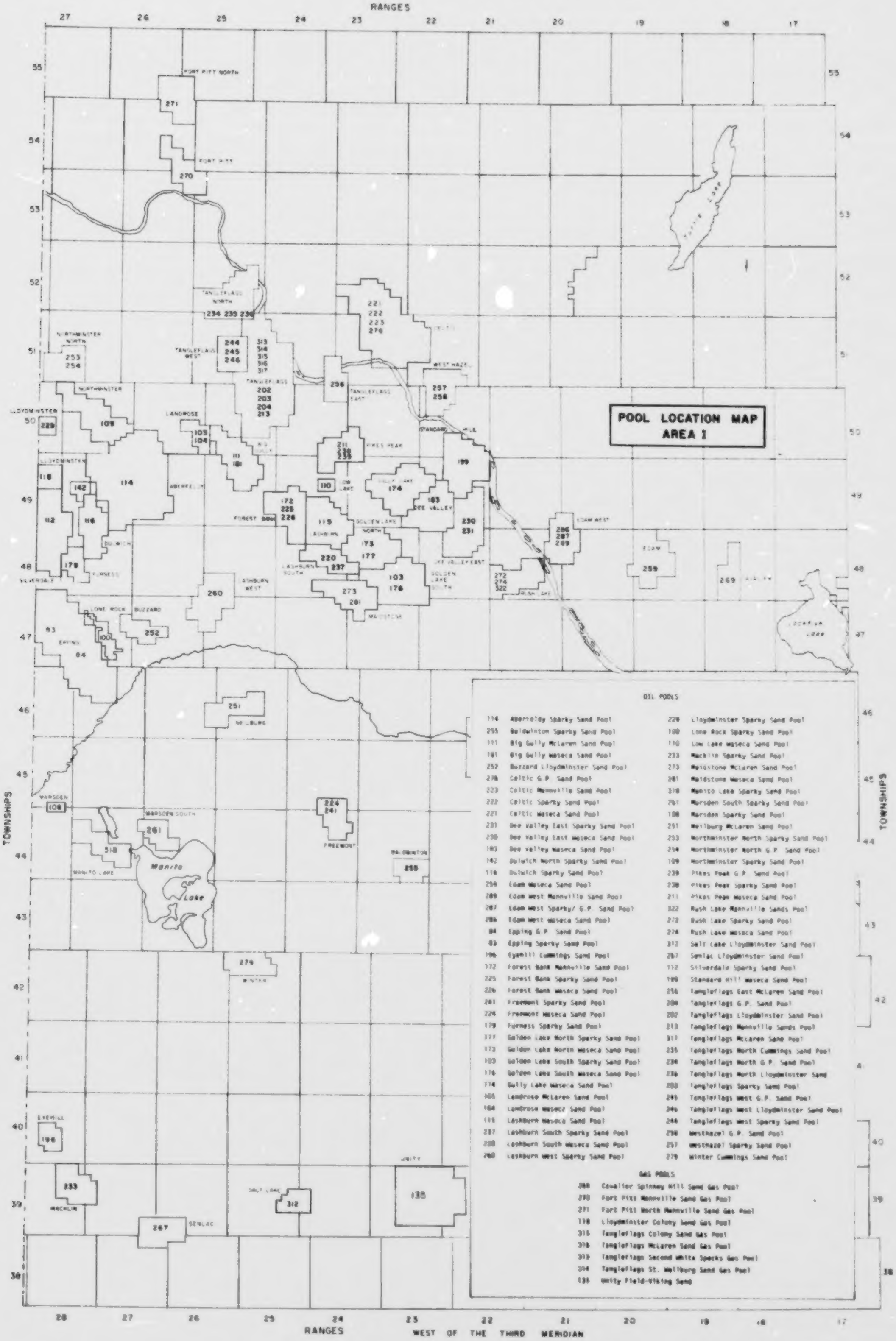
# MINERAL DEVELOPMENT MAP
OF
# SOUTHERN SASKATCHEWAN

LEGEND
Storage Caverns (LPG., N.G.)
Commercial Coal Areas
Oil Pools
Gas Pools
Well Spacing Areas
Commercial Potash Areas
Oil, LPG, and Refined Products Pipelines
Gas Pipe Lines
Oil Refineries ▲
Electrical Generating Stations
Bentonite Plants ♦
Gas Conservation Plants
Potash Shaft Mine
Potash Solution Mine
Sodium Sulphate Plants ▼
Sodium Sulphate Deposits
Salt Plants ■
Oil Spill Containment Areas AREA-1
Revised to December 31, 1987
Kilometres 10 0 10 20 30 40 50 Kilometres
Miles 5 0 10 20 30 40 50 Miles
Saskatchewan Energy and Mines
Cartography by Saskatchewan Energy and Mines Drafting and Cartography
Annual revision, K.G. Jones
SASKATCHEWAN
AREA SHOWN
ALBERTA
MANITOBA
AREA-G
AREA-1
AREA-E
AREA-2
AREA-D
AREA-C
AREA-3
AREA-6
AREA-4
AREA-A
AREA-5
AREA-B
SQUAW RAPIDS (HYDRO)
COTEAU CREEK (HYDRO)
POPLAR RIVER (COAL)
BOUNDARY (COAL)
POTASH CORP OF SASK.
POTASH COMPANY OF AMERICA
CENTRAL CANADA POTASH COMPANY LIMITED
LITTLE MANITOU LAKE
MIDWEST CHEMICALS INDUSTRIES LIMITED

## SASKATCHEWAN
## PETROLEUM AND NATURAL GAS
# PRODUCTION AND DISPOSITION AREAS


SCALE IN MILES
0 10 20 30 40 50
AREA RESERVED FOR MILITARY USE
PRINCE ALBERT NATIONAL PARK
AREA I
AREA II
AREA III
AREA IV
ALBERTA
MANITOBA
UNITED STATES OF AMERICA


GAS POOLS
171 Beacon Hill Mannville Sand Gas Pool
299 Beacon Hill West Mannville Sand Gas Pool
232 Pierceland Mannville Sand Gas Pool
COLD LAKE
PIERCE LAKE
232
171
299
MINISTIKWAN LAKE I.R. No 161A
MINISTIKWAN LAKE I.R. No. 161
MAKWA I.R. No 129B
No 129B
No 129
POOL LOCATION MAP
AREA I
TOWNSHIPS
58
59
60
61
62
63
64
65
66
27
26
25
24
23
22
RANGES
WEST OF THE THIRD MERIDIAN

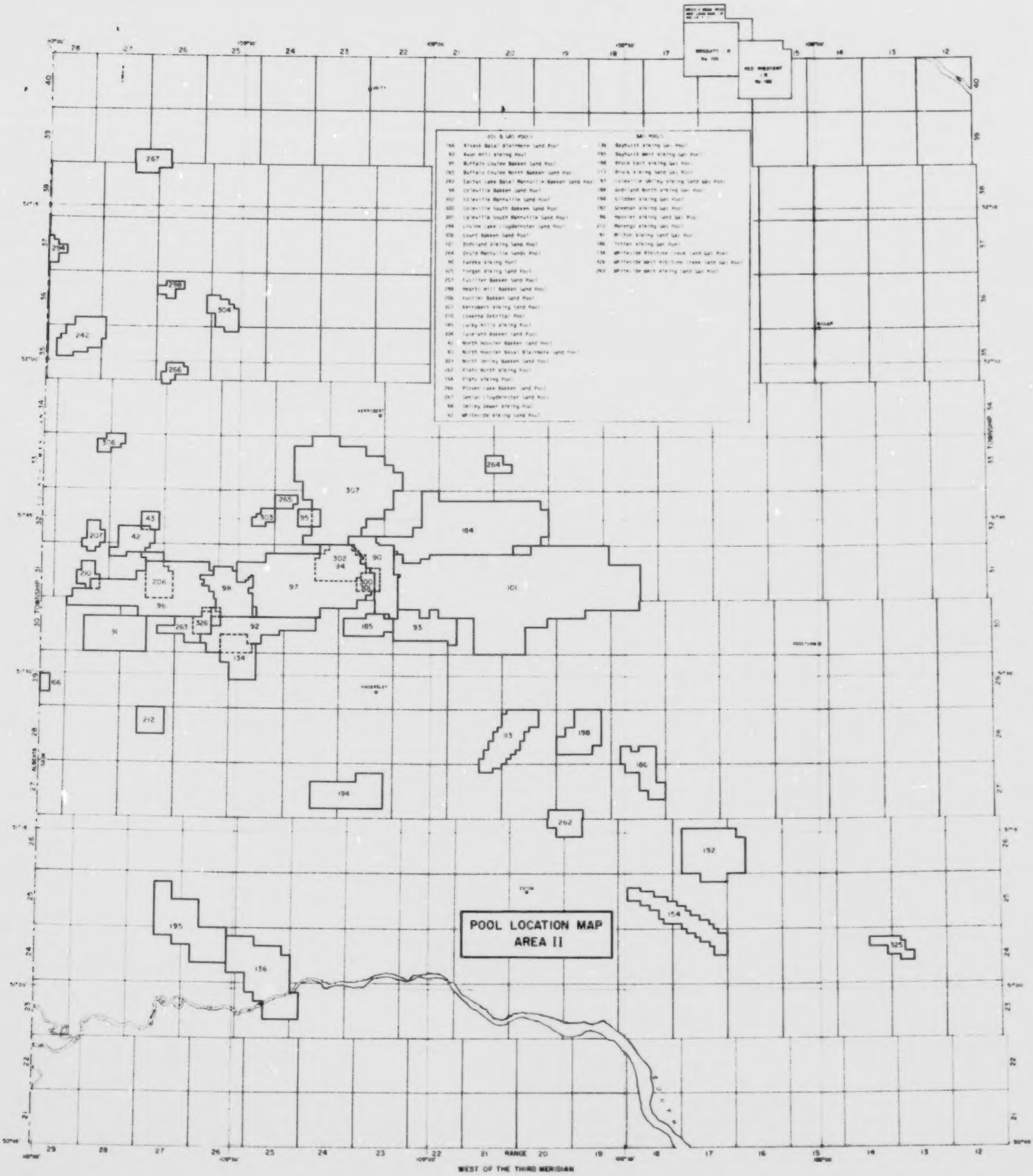

POOL LOCATION MAP
AREA I
RANGES
TOWNSHIPS
RANGES WEST OF THE THIRD MERIDIAN
FORT PITT NORTH
FORT PITT
TANGLEFLAGS NORTH
TANGLEFLAGS WEST
TANGLEFLAGS
TANGLEFLAGS EAST
NORTHMINSTER NORTH
NORTHMINSTER
LLOYDMINSTER
LANDROSE
ABERFELDY
DULWICH
FURNESS
SILVERDALE
LONE ROCK
BUZZARD
EPPING
PIKES PEAK
LOW LAKE
GULLY LAKE
DEE VALLEY
GOLDEN LAKE NORTH
GOLDEN LAKE SOUTH
DEE VALLEY EAST
FOREST BANK
LASHBURN
LASHBURN SOUTH
LASHBURN WEST
MAIDSTONE
STANDARD HILL
WEST HAZEL
EDAM WEST
EDAM
RUSH LAKE
UNITY
NEILBURG
MARSDEN
MARSDEN SOUTH
MANITO LAKE
Manito Lake
FREEMONT
BALDWINTON
WINTER
EYEHILL
MACKLIN
SALT LAKE
SENLAC
Turtle Lake
Jackfish Lake

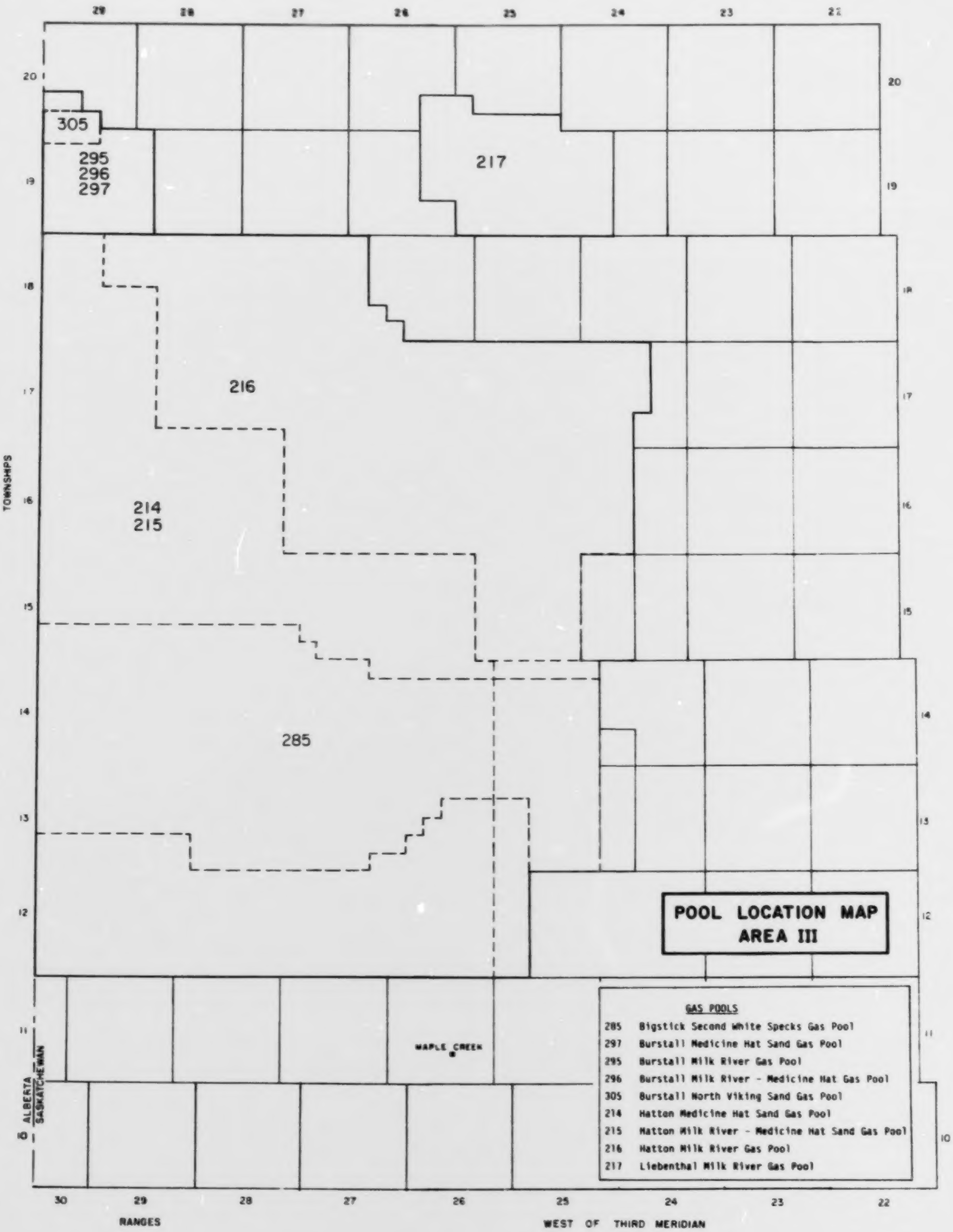
OIL POOLS

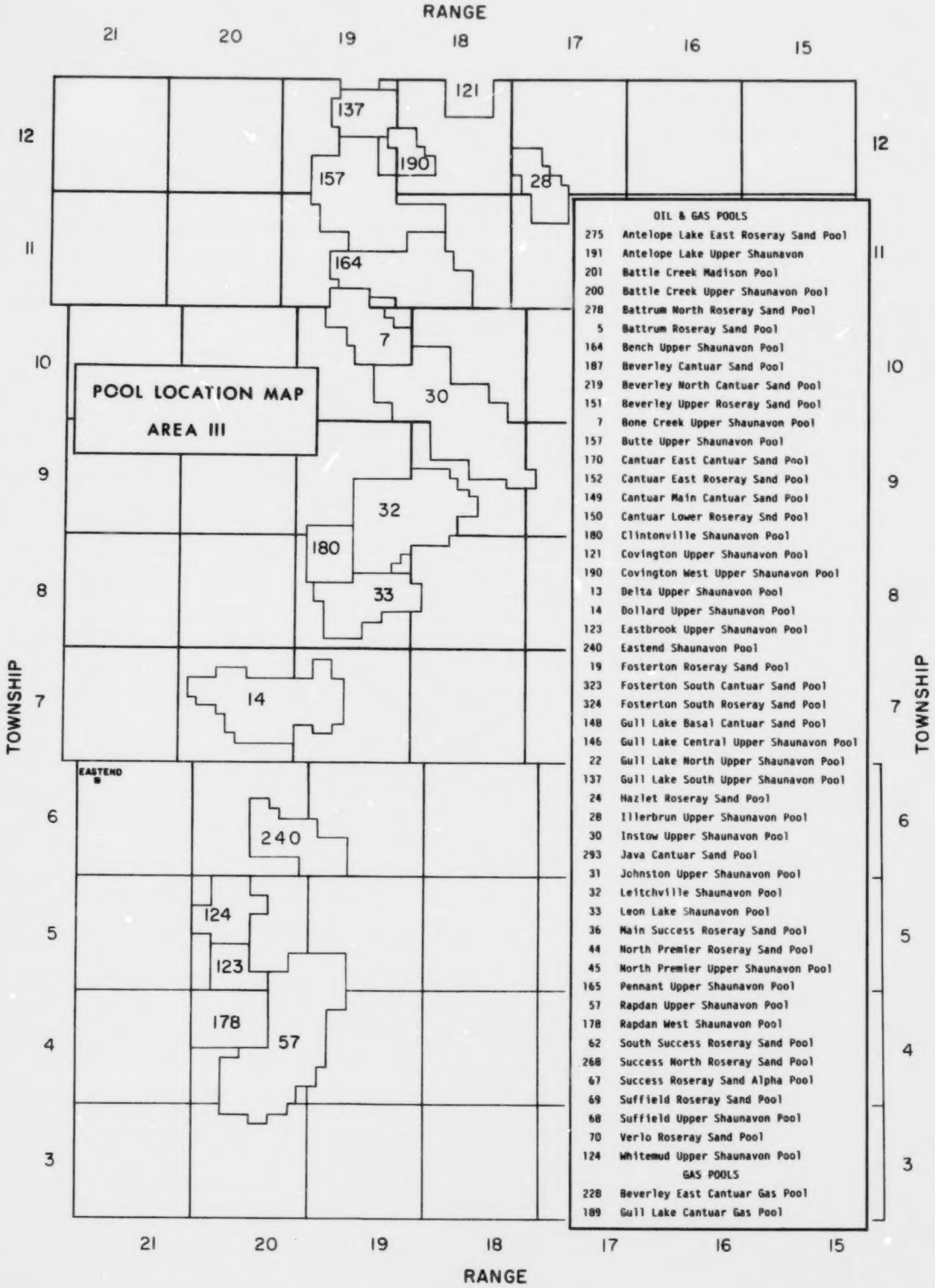
| | |
|---|---|
| 114 | Aberfeldy Sparky Sand Pool |
| 255 | Baldwinton Sparky Sand Pool |
| 111 | Big Gully McLaren Sand Pool |
| 181 | Big Gully Waseca Sand Pool |
| 252 | Buzzard Lloydminster Sand Pool |
| 276 | Celtic G.P. Sand Pool |
| 223 | Celtic Mannville Sand Pool |
| 222 | Celtic Sparky Sand Pool |
| 221 | Celtic Waseca Sand Pool |
| 231 | Dee Valley East Sparky Sand Pool |
| 230 | Dee Valley East Waseca Sand Pool |
| 183 | Dee Valley Waseca Sand Pool |
| 142 | Dulwich North Sparky Sand Pool |
| 116 | Dulwich Sparky Sand Pool |
| 259 | Edam Waseca Sand Pool |
| 209 | Edam West Mannville Sand Pool |
| 207 | Edam West Sparky/ G.P. Sand Pool |
| 206 | Edam West Waseca Sand Pool |
| 84 | Epping G.P. Sand Pool |
| 83 | Epping Sparky Sand Pool |
| 196 | Eyehill Cummings Sand Pool |
| 172 | Forest Bank Mannville Sand Pool |
| 225 | Forest Bank Sparky Sand Pool |
| 226 | Forest Bank Waseca Sand Pool |
| 241 | Freemont Sparky Sand Pool |
| 224 | Freemont Waseca Sand Pool |
| 179 | Furness Sparky Sand Pool |
| 177 | Golden Lake North Sparky Sand Pool |
| 173 | Golden Lake North Waseca Sand Pool |
| 103 | Golden Lake South Sparky Sand Pool |
| 176 | Golden Lake South Waseca Sand Pool |
| 174 | Gully Lake Waseca Sand Pool |
| 105 | Landrose McLaren Sand Pool |
| 104 | Landrose Waseca Sand Pool |
| 115 | Lashburn Waseca Sand Pool |
| 237 | Lashburn South Sparky Sand Pool |
| 220 | Lashburn South Waseca Sand Pool |
| 260 | Lashburn West Sparky Sand Pool |
| 229 | Lloydminster Sparky Sand Pool |
| 100 | Lone Rock Sparky Sand Pool |
| 110 | Low Lake Waseca Sand Pool |
| 233 | Macklin Sparky Sand Pool |
| 273 | Maidstone McLaren Sand Pool |
| 281 | Maidstone Waseca Sand Pool |
| 318 | Manito Lake Sparky Sand Pool |
| 261 | Marsden South Sparky Sand Pool |
| 108 | Marsden Sparky Sand Pool |
| 251 | Neilburg McLaren Sand Pool |
| 253 | Northminster North Sparky Sand Pool |
| 254 | Northminster North G.P. Sand Pool |
| 109 | Northminster Sparky Sand Pool |
| 239 | Pikes Peak G.P. Sand Pool |
| 238 | Pikes Peak Sparky Sand Pool |
| 211 | Pikes Peak Waseca Sand Pool |
| 322 | Rush Lake Mannville Sands Pool |
| 272 | Rush Lake Sparky Sand Pool |
| 274 | Rush Lake Waseca Sand Pool |
| 312 | Salt Lake Lloydminster Sand Pool |
| 267 | Senlac Lloydminster Sand Pool |
| 112 | Silverdale Sparky Sand Pool |
| 199 | Standard Hill Waseca Sand Pool |
| 256 | Tangleflags East McLaren Sand Pool |
| 204 | Tangleflags G.P. Sand Pool |
| 202 | Tangleflags Lloydminster Sand Pool |
| 213 | Tangleflags Mannville Sands Pool |
| 317 | Tangleflags McLaren Sand Pool |
| 235 | Tangleflags North Cummings Sand Pool |
| 234 | Tangleflags North G.P. Sand Pool |
| 236 | Tangleflags North Lloydminster Sand |
| 203 | Tangleflags Sparky Sand Pool |
| 245 | Tangleflags West G.P. Sand Pool |
| 246 | Tangleflags West Lloydminster Sand Pool |
| 244 | Tangleflags West Sparky Sand Pool |
| 258 | Westhazel G.P. Sand Pool |
| 257 | Westhazel Sparky Sand Pool |
| 279 | Winter Cummings Sand Pool |

GAS POOLS

| | |
|---|---|
| 208 | Cavalier Spinney Hill Sand Gas Pool |
| 270 | Fort Pitt Mannville Sand Gas Pool |
| 271 | Fort Pitt North Mannville Sand Gas Pool |
| 118 | Lloydminster Colony Sand Gas Pool |
| 315 | Tangleflags Colony Sand Gas Pool |
| 316 | Tangleflags McLaren Sand Gas Pool |
| 313 | Tangleflags Second White Specks Gas Pool |
| 314 | Tangleflags St. Wallburg Sand Gas Pool |
| 135 | Unity Field-Viking Sand |


POOL LOCATION MAP
AREA II
OIL & GAS POOLS
166 Alsask Basal Blairmore Sand Pool
93 Avon Hill Viking Pool
95 Buffalo Coulee Bakken Sand Pool
265 Buffalo Coulee North Bakken Sand Pool
242 Cactus Lake Basal Mannville Bakken Sand Pool
94 Coleville Bakken Sand Pool
302 Coleville Mannville Sand Pool
300 Coleville South Bakken Sand Pool
301 Coleville South Mannville Sand Pool
298 Cosine Lake Lloydminster Sand Pool
306 Court Bakken Sand Pool
101 Dodsland Viking Sand Pool
264 Druid Mannville Sands Pool
90 Eureka Viking Pool
325 Forgan Viking Sand Pool
207 Fusilier Bakken Sand Pool
294 Hearts Hill Bakken Sand Pool
206 Hoosier Bakken Sand Pool
303 Kerrobert Viking Sand Pool
210 Loverna Detrital Pool
185 Lucky Hills Viking Pool
304 Luseland Bakken Sand Pool
42 North Hoosier Bakken Sand Pool
43 North Hoosier Basal Blairmore Sand Pool
307 North Smiley Bakken Sand Pool
262 Plato North Viking Pool
154 Plato Viking Pool
266 Plover Lake Bakken Sand Pool
267 Senlac Lloydminster Sand Pool
98 Smiley Dewar Viking Pool
92 Whiteside Viking Sand Pool
GAS POOLS
136 Bayhurst Viking Gas Pool
195 Bayhurst West Viking Gas Pool
198 Brock East Viking Gas Pool
113 Brock Viking Sand Gas Pool
97 Coleville Smiley Viking Sand Gas Pool
184 Dodsland North Viking Gas Pool
194 Glidden Viking Gas Pool
192 Greenan Viking Gas Pool
96 Hoosier Viking Sand Gas Pool
212 Marengo Viking Gas Pool
91 Milton Viking Sand Gas Pool
186 Tithen Viking Gas Pool
134 Whiteside [illegible] Creek Sand Gas Pool
326 Whiteside West [illegible] Creek Sand Gas Pool
263 Whiteside West Viking Sand Gas Pool
MOSQUITO I.R. No 109
RED PHEASANT I.R. No 108
UNITY
KERROBERT
KINDERSLEY
ROSETOWN
BIGGAR
ESTON
ALBERTA
SASK
TOWNSHIP
RANGE
WEST OF THE THIRD MERIDIAN
S. SASK. R.
29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12
21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
110°00' 109°30' 109°00' 108°30' 108°00'
51°00' 51°15' 51°30' 51°45' 52°00' 52°15' 50°45'

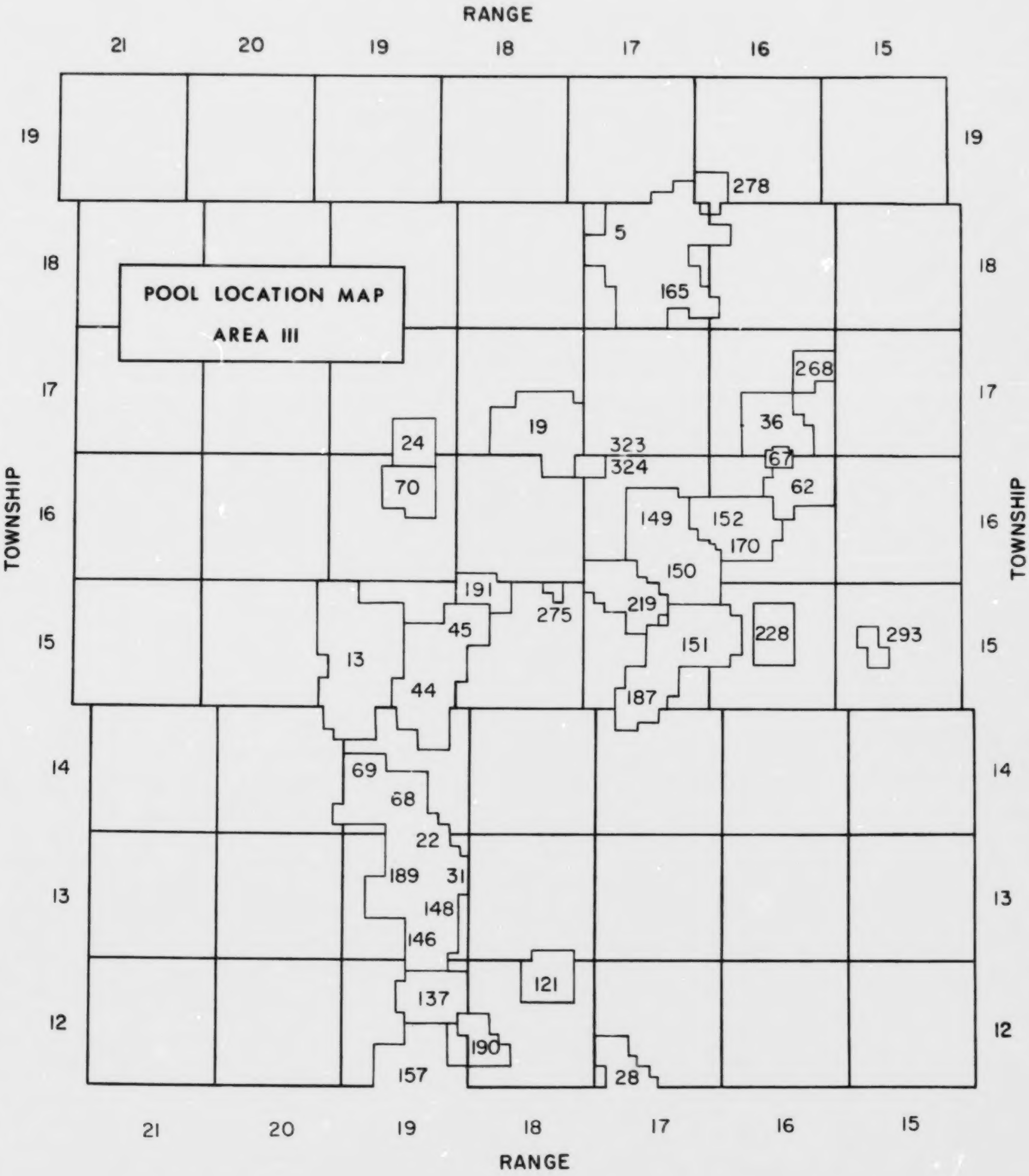

POOL LOCATION MAP
AREA III
GAS POOLS
285 Bigstick Second White Specks Gas Pool
297 Burstall Medicine Hat Sand Gas Pool
295 Burstall Milk River Gas Pool
296 Burstall Milk River - Medicine Hat Gas Pool
305 Burstall North Viking Sand Gas Pool
214 Hatton Medicine Hat Sand Gas Pool
215 Hatton Milk River - Medicine Hat Sand Gas Pool
216 Hatton Milk River Gas Pool
217 Liebenthal Milk River Gas Pool
305
295
296
297
217
216
214
215
285
MAPLE CREEK
ALBERTA
SASKATCHEWAN
TOWNSHIPS
RANGES
WEST OF THIRD MERIDIAN
29
28
27
26
25
24
23
22
30
20
19
18
17
16
15
14
13
12
11
10



## POOL LOCATION MAP AREA III

| | OIL & GAS POOLS |
|---|---|
| 275 | Antelope Lake East Roseray Sand Pool |
| 191 | Antelope Lake Upper Shaunavon |
| 201 | Battle Creek Madison Pool |
| 200 | Battle Creek Upper Shaunavon Pool |
| 278 | Battrum North Roseray Sand Pool |
| 5 | Battrum Roseray Sand Pool |
| 164 | Bench Upper Shaunavon Pool |
| 187 | Beverley Cantuar Sand Pool |
| 219 | Beverley North Cantuar Sand Pool |
| 151 | Beverley Upper Roseray Sand Pool |
| 7 | Bone Creek Upper Shaunavon Pool |
| 157 | Butte Upper Shaunavon Pool |
| 170 | Cantuar East Cantuar Sand Pool |
| 152 | Cantuar East Roseray Sand Pool |
| 149 | Cantuar Main Cantuar Sand Pool |
| 150 | Cantuar Lower Roseray Snd Pool |
| 180 | Clintonville Shaunavon Pool |
| 121 | Covington Upper Shaunavon Pool |
| 190 | Covington West Upper Shaunavon Pool |
| 13 | Delta Upper Shaunavon Pool |
| 14 | Dollard Upper Shaunavon Pool |
| 123 | Eastbrook Upper Shaunavon Pool |
| 240 | Eastend Shaunavon Pool |
| 19 | Fosterton Roseray Sand Pool |
| 323 | Fosterton South Cantuar Sand Pool |
| 324 | Fosterton South Roseray Sand Pool |
| 148 | Gull Lake Basal Cantuar Sand Pool |
| 146 | Gull Lake Central Upper Shaunavon Pool |
| 22 | Gull Lake North Upper Shaunavon Pool |
| 137 | Gull Lake South Upper Shaunavon Pool |
| 24 | Hazlet Roseray Sand Pool |
| 28 | Illerbrun Upper Shaunavon Pool |
| 30 | Instow Upper Shaunavon Pool |
| 293 | Java Cantuar Sand Pool |
| 31 | Johnston Upper Shaunavon Pool |
| 32 | Leitchville Shaunavon Pool |
| 33 | Leon Lake Shaunavon Pool |
| 36 | Main Success Roseray Sand Pool |
| 44 | North Premier Roseray Sand Pool |
| 45 | North Premier Upper Shaunavon Pool |
| 165 | Pennant Upper Shaunavon Pool |
| 57 | Rapdan Upper Shaunavon Pool |
| 178 | Rapdan West Shaunavon Pool |
| 62 | South Success Roseray Sand Pool |
| 268 | Success North Roseray Sand Pool |
| 67 | Success Roseray Sand Alpha Pool |
| 69 | Suffield Roseray Sand Pool |
| 68 | Suffield Upper Shaunavon Pool |
| 70 | Verlo Roseray Sand Pool |
| 124 | Whitemud Upper Shaunavon Pool |
| | GAS POOLS |
| 228 | Beverley East Cantuar Gas Pool |
| 189 | Gull Lake Cantuar Gas Pool |

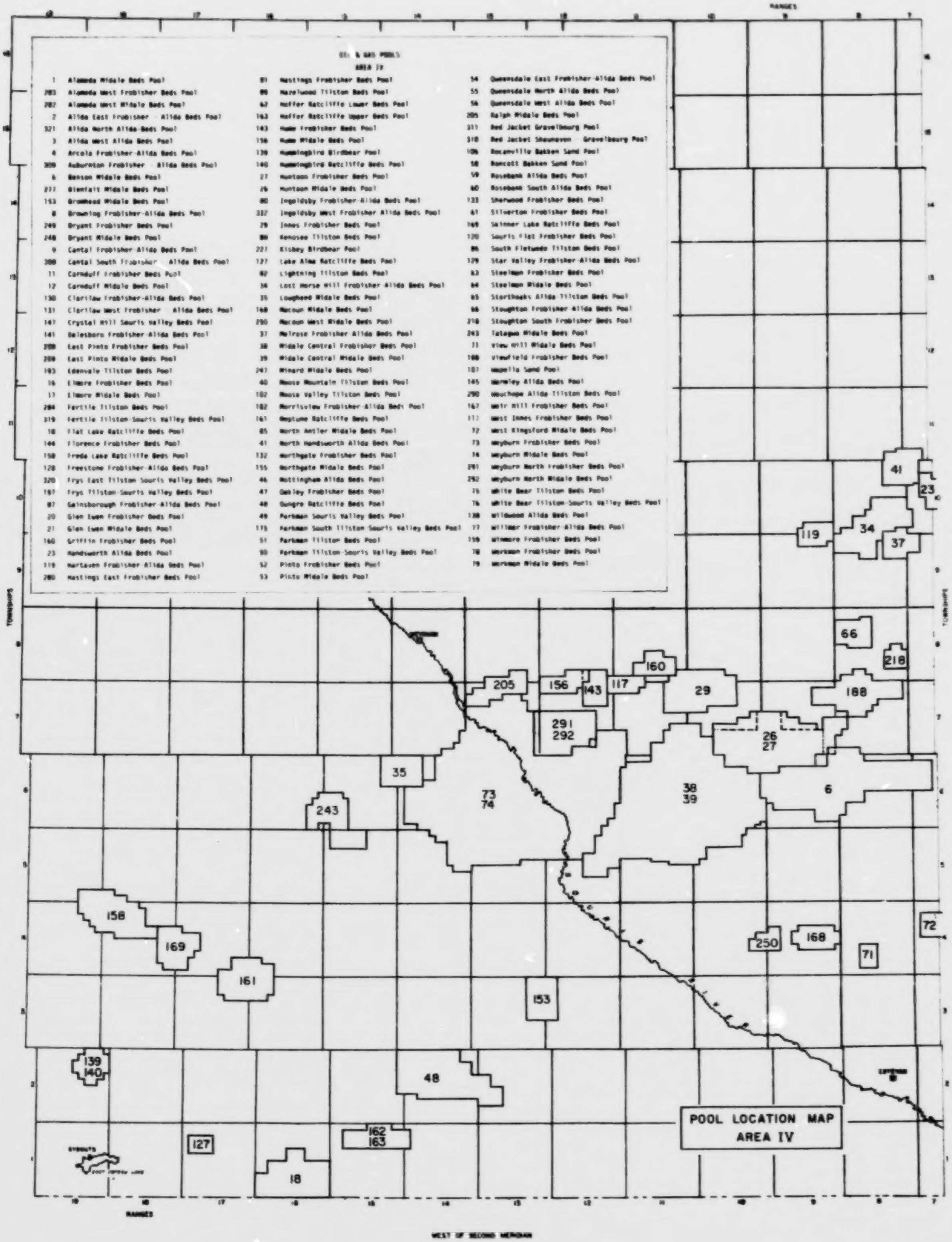
WEST OF THIRD MERIDIAN


RANGE
21
20
19
18
17
16
15
TOWNSHIP
19
18
17
16
15
14
13
12
278
5
165
268
36
19
24
323
324
67
62
70
149
152
170
150
191
275
219
228
293
45
151
13
44
187
69
68
22
189
31
148
146
121
137
190
157
28

**POOL LOCATION MAP**

**AREA III**

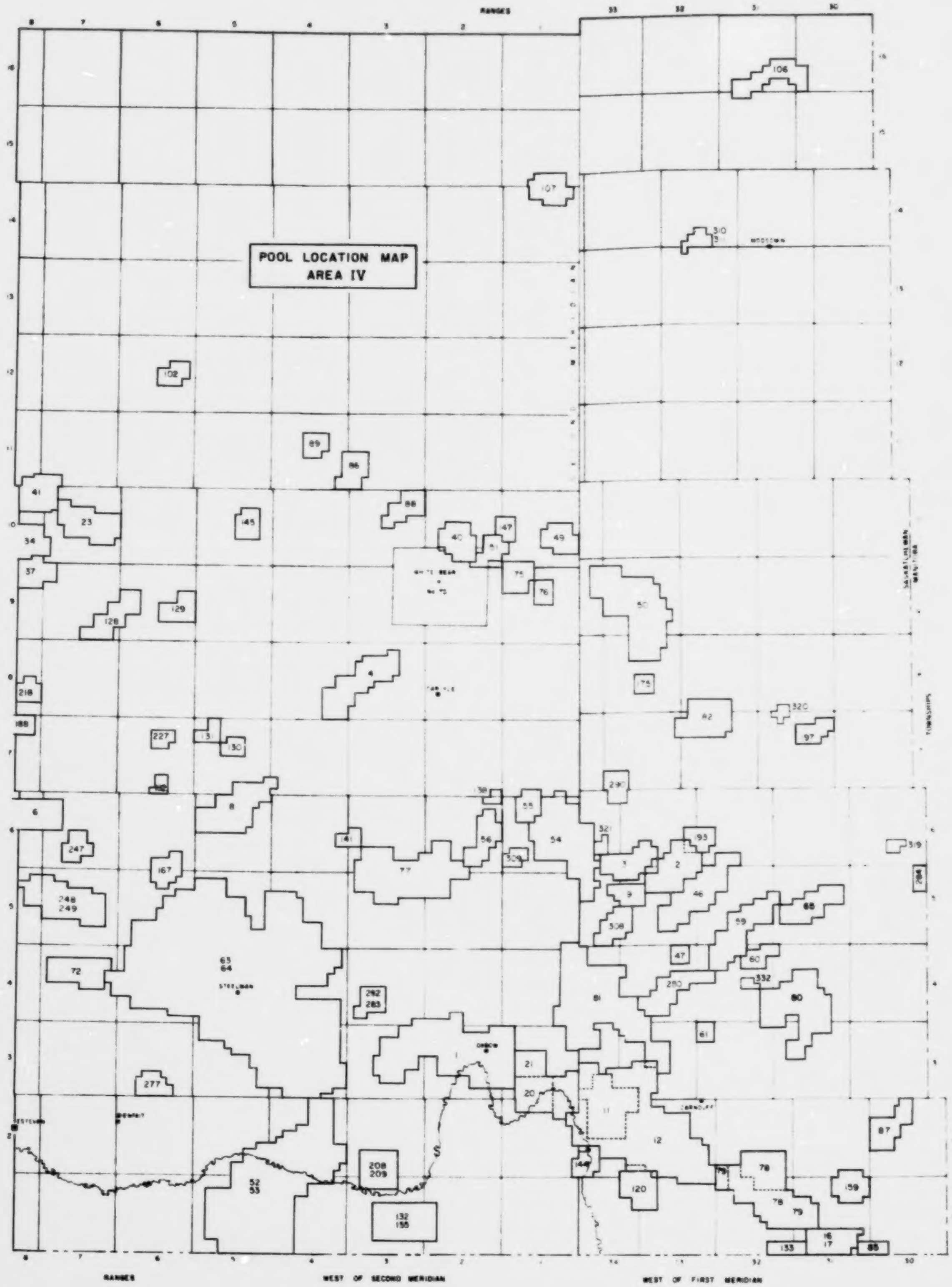
WEST OF THIRD MERIDIAN



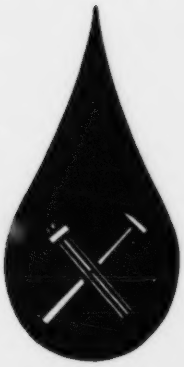
POOL LOCATION MAP
AREA IV

OIL & GAS POOLS
AREA IV

| | |
|---|---|
| 1 | Alameda Midale Beds Pool |
| 203 | Alameda West Frobisher Beds Pool |
| 202 | Alameda West Midale Beds Pool |
| 2 | Alida East Frobisher - Alida Beds Pool |
| 321 | Alida North Alida-Beds Pool |
| 3 | Alida West Alida Beds Pool |
| 4 | Arcola Frobisher-Alida Beds Pool |
| 309 | Auburnton Frobisher - Alida Beds Pool |
| 6 | Benson Midale Beds Pool |
| 277 | Bienfait Midale Beds Pool |
| 153 | Bromhead Midale Beds Pool |
| 8 | Browning Frobisher-Alida Beds Pool |
| 249 | Bryant Frobisher Beds Pool |
| 248 | Bryant Midale Beds Pool |
| 9 | Cantal Frobisher-Alida Beds Pool |
| 308 | Cantal South Frobisher - Alida Beds Pool |
| 11 | Carnduff Frobisher Beds Pool |
| 12 | Carnduff Midale Beds Pool |
| 130 | Clarilaw Frobisher-Alida Beds Pool |
| 131 | Clarilaw West Frobisher - Alida Beds Pool |
| 147 | Crystal Hill Souris Valley Beds Pool |
| 141 | Dalesboro Frobisher-Alida Beds Pool |
| 209 | East Pinto Frobisher Beds Pool |
| 208 | East Pinto Midale Beds Pool |
| 193 | Edenvale Tilston Beds Pool |
| 16 | Elmore Frobisher Beds Pool |
| 17 | Elmore Midale Beds Pool |
| 204 | Fertile Tilston Beds Pool |
| 319 | Fertile Tilston-Souris Valley Beds Pool |
| 18 | Flat Lake Ratcliffe Beds Pool |
| 144 | Florence Frobisher Beds Pool |
| 158 | Freda Lake Ratcliffe Beds Pool |
| 128 | Freestone Frobisher-Alida Beds Pool |
| 320 | Frys East Tilston-Souris Valley Beds Pool |
| 187 | Frys Tilston-Souris Valley Beds Pool |
| 87 | Gainsborough Frobisher-Alida Beds Pool |
| 20 | Glen Ewen Frobisher Beds Pool |
| 21 | Glen Ewen Midale Beds Pool |
| 160 | Griffin Frobisher Beds Pool |
| 23 | Handsworth Alida Beds Pool |
| 119 | Hartaven Frobisher-Alida Beds Pool |
| 280 | Hastings East Frobisher Beds Pool |
| 81 | Hastings Frobisher Beds Pool |
| 89 | Hazelwood Tilston Beds Pool |
| 62 | Hoffer Ratcliffe Lower Beds Pool |
| 163 | Hoffer Ratcliffe Upper Beds Pool |
| 143 | Hume Frobisher Beds Pool |
| 156 | Hume Midale Beds Pool |
| 139 | Hummingbird Birdbear Pool |
| 140 | Hummingbird Ratcliffe Beds Pool |
| 27 | Huntoon Frobisher Beds Pool |
| 26 | Huntoon Midale Beds Pool |
| 80 | Ingoldsby Frobisher-Alida Beds Pool |
| 332 | Ingoldsby West Frobisher Alida Beds Pool |
| 29 | Innes Frobisher Beds Pool |
| 88 | Kenosee Tilston Beds Pool |
| 227 | Kisbey Birdbear Pool |
| 127 | Lake Alma Ratcliffe Beds Pool |
| 82 | Lightning Tilston Beds Pool |
| 36 | Lost Horse Hill Frobisher Alida Beds Pool |
| 35 | Lougheed Midale Beds Pool |
| 168 | Macoun Midale Beds Pool |
| 296 | Macoun West Midale Beds Pool |
| 37 | Melrose Frobisher Alida Beds Pool |
| 38 | Midale Central Frobisher Beds Pool |
| 39 | Midale Central Midale Beds Pool |
| 247 | Minard Midale Beds Pool |
| 40 | Moose Mountain Tilston Beds Pool |
| 102 | Moose Valley Tilston Beds Pool |
| 182 | Morrisview Frobisher-Alida Beds Pool |
| 161 | Neptune Ratcliffe Beds Pool |
| 85 | North Antler Midale Beds Pool |
| 41 | North Handsworth Alida Beds Pool |
| 132 | Northgate Frobisher Beds Pool |
| 155 | Northgate Midale Beds Pool |
| 46 | Nottingham Alida Beds Pool |
| 47 | Oakley Frobisher Beds Pool |
| 48 | Oungre Ratcliffe Beds Pool |
| 49 | Parkman Souris Valley Beds Pool |
| 175 | Parkman South Tilston Souris Valley Beds Pool |
| 51 | Parkman Tilston Beds Pool |
| 90 | Parkman Tilston-Souris Valley Beds Pool |
| 52 | Pinto Frobisher Beds Pool |
| 53 | Pinto Midale Beds Pool |
| 54 | Queensdale East Frobisher-Alida Beds Pool |
| 55 | Queensdale North Alida Beds Pool |
| 56 | Queensdale West Alida Beds Pool |
| 205 | Ralph Midale Beds Pool |
| 311 | Red Jacket Gravelbourg Pool |
| 310 | Red Jacket Shaunavon - Gravelbourg Pool |
| 106 | Rocanville Bakken Sand Pool |
| 58 | Roncott Bakken Sand Pool |
| 59 | Rosebank Alida Beds Pool |
| 60 | Rosebank South Alida Beds Pool |
| 133 | Sherwood Frobisher Beds Pool |
| 61 | Silverton Frobisher Beds Pool |
| 169 | Skinner Lake Ratcliffe Beds Pool |
| 120 | Souris Flat Frobisher Beds Pool |
| 86 | South Fletwode Tilston Beds Pool |
| 129 | Star Valley Frobisher-Alida Beds Pool |
| 63 | Steelman Frobisher Beds Pool |
| 64 | Steelman Midale Beds Pool |
| 65 | Storthoaks Alida Tilston Beds Pool |
| 66 | Stoughton Frobisher Alida Beds Pool |
| 218 | Stoughton South Frobisher Beds Pool |
| 243 | Tatagwa Midale Beds Pool |
| 71 | View Hill Midale Beds Pool |
| 188 | Viewfield Frobisher Beds Pool |
| 107 | Wapella Sand Pool |
| 145 | Wormley Alida Beds Pool |
| 290 | Wauchope Alida-Tilston Beds Pool |
| 167 | Weir Hill Frobisher Beds Pool |
| 177 | West Innes Frobisher Beds Pool |
| 72 | West Kingsford Midale Beds Pool |
| 73 | Weyburn Frobisher Beds Pool |
| 74 | Weyburn Midale Beds Pool |
| 291 | Weyburn North Frobisher Beds Pool |
| 292 | Weyburn North Midale Beds Pool |
| 75 | White Bear Tilston Beds Pool |
| 76 | White Bear Tilston-Souris Valley Beds Pool |
| 138 | Wildwood Alida Beds Pool |
| 77 | Willmar Frobisher Alida Beds Pool |
| 159 | Wimmore Frobisher Beds Pool |
| 78 | Workman Frobisher Beds Pool |
| 79 | Workman Midale Beds Pool |


POOL LOCATION MAP
AREA IV
RANGES
TOWNSHIPS
WEST OF SECOND MERIDIAN
WEST OF FIRST MERIDIAN
SASKATCHEWAN
MANITOBA
ESTEVAN
BIENFAIT
STEELMAN
OXBOW
CARNDUFF
CARLYLE
WHITE BEAR
MOOSOMIN
106
107
310
102
89
86
41
23
34
37
145
88
40
47
51
49
75
76
128
129
50
4
218
188
227
131
130
175
82
320
97
6
8
138
55
290
141
56
54
321
193
247
167
77
309
3
2
319
248
249
9
46
286
308
68
59
63
64
47
60
72
280
332
292
283
81
80
61
1
21
277
20
11
12
87
208
209
144
79
78
52
53
120
159
132
155
16
17
133
85

# RESERVOIR DATA RESERVES AND PRODUCTION — OIL



# FIVE YEAR OIL SUMMARY

| | 1982 | 1983 | 1984 | 1985 | 1986 |
|---|---|---|---|---|---|
| **INITIAL RECOVERABLE RESERVES (Million Cubic Metres)** | | | | | |
| Area I - Heavy | 51.910 | 57.176 | 61.198 | 65.070 | 64.449 |
| Area II - Heavy | 15.362 | 16.146 | 18.740 | 19.077 | 19.334 |
| Area II - Light | 17.507 | 19.299 | 22.208 | 23.730 | 27.713 |
| Area III - Medium | 88.965 | 89.635 | 90.700 | 93.096 | 95.454 |
| Area IV - Medium | 98.776 | 100.593 | 101.844 | 103.600 | 106.070 |
| Area IV - Light | 116.510 | 119.565 | 124.200 | 130.043 | 133.089 |
| PROVINCIAL TOTAL | 389.030 | 402.414 | 418.890 | 434.617 | 446.109 |
| **REMAINING RECOVERABLE RESERVES (Million Cubic Metres)** | | | | | |
| Area I - Heavy | 23.233 | 26.029 | 27.268 | 28.074 | 24.491 |
| Area II - Heavy | 6.765 | 6.820 | 8.611 | 8.180 | 7.668 |
| Area II - Light | 5.757 | 6.877 | 8.836 | 9.137 | 11.906 |
| Area III - Medium | 16.292 | 15.341 | 14.587 | 15.205 | 15.804 |
| Area IV - Medium | 24.990 | 25.145 | 24.442 | 24.188 | 24.441 |
| Area IV - Light | 21.226 | 21.906 | 24.031 | 27.144 | 27.419 |
| PROVINCIAL TOTAL | 98.263 | 102.118 | 107.775 | 111.928 | 111.729 |
| **YEARLY PRODUCTION (Million Cubic Metres)** | | | | | |
| Area I - Heavy | 2.051 | 2.479 | 2.780 | 3.063 | 2.956 |
| Area II - Heavy | 0.672 | 0.730 | 0.801 | 0.771 | 0.766 |
| Area II - Light | 0.486 | 0.670 | 0.950 | 1.218 | 1.208 |
| Area III - Medium | 1.422 | 1.622 | 1.811 | 1.781 | 1.757 |
| Area IV - Medium | 1.702 | 1.704 | 1.949 | 2.047 | 2.140 |
| Area IV - Light | 1.771 | 2.330 | 2.502 | 2.703 | 2.842 |
| PROVINCIAL TOTAL | 8.104 | 9.535 | 10.793 | 11.583 | 11.669 |
| **NUMBER OF PRODUCING WELLS** | | | | | |
| Area I - Heavy | 2 799 | 3 148 | 3 531 | 4 098 | 3 874 |
| Area II - Heavy | 645 | 729 | 794 | 892 | 844 |
| Area II - Light | 1 468 | 1 985 | 2 818 | 3 750 | 3 888 |
| Area III - Medium | 983 | 1 022 | 1 116 | 1 279 | 1 263 |
| Area IV - Medium | 1 502 | 1 627 | 1 910 | 2 240 | 2 354 |
| Area IV - Light | 2 302 | 2 465 | 2 785 | 3 179 | 3 278 |
| PROVINCIAL TOTAL | 9 699 | 10 976 | 12 954 | 15 438 | 15 501 |
| **AVERAGE DAILY PRODUCTION (Cubic Metres Per Day)** | | | | | |
| Area I - Heavy | 6 163 | 7 043 | 7 730 | 9 225 | 8 066 |
| Area II - Heavy | 1 925 | 2 037 | 2 127 | 2 073 | 2 167 |
| Area II - Light | 1 564 | 2 054 | 2 824 | 3 652 | 3 025 |
| Area III - Medium | 4 794 | 4 629 | 4 495 | 4 751 | 5 402 |
| Area IV - Medium | 4 780 | 5 011 | 5 479 | 4 706 | 6 059 |
| Area IV - Light | 6 689 | 6 388 | 7 251 | 7 426 | 8 065 |
| PROVINCIAL TOTAL | 25 913 | 27 163 | 29 906 | 31 833 | 32 784 |

# OIL RESERVES

| | | INITIAL OIL IN PLACE MILLION CUBIC METRES | ESTIMATED RECOVERY | | | INITIAL RESERVES | | | CUMULATIVE PROD. DEC 31/86 | REMAINING RESERVES | 1986 PROD 1000 $m^3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POOL | PRODUCING HORIZON | | PRIMARY | ENHANCED | TOTAL | PRIMARY | ENHANCED | TOTAL | | | |
| | | | PER CENT | | | MILLION CUBIC METRES | | | | | |
| **AREA I - HEAVY** | | | | | | | | | | | |
| ABERFELDY | SPARKY SAND (UNIT) | 55.702 | 8.00 | 2.00 | 10.00 | 4.456 | 1.114 | 5.570 | 5.137 | 0.433 | 131.886 |
| | SPARKY SAND (S. ABFDY SPKY VOL UNIT) | 23.605 | 5.80 | 1.00 | 6.80 | 1.369 | 0.236 | 1.605 | 1.470 | 0.135 | 27.448 |
| | SPARKY SAND (NON-UNIT) | 18.131 | 2.60 | 0.00 | 2.60 | 0.471 | 0.000 | 0.471 | 0.320 | 0.151 | 21.960 |
| BALDWINTON | SPARKY SAND | 2.695 | 3.20 | 0.00 | 3.20 | 0.086 | 0.000 | 0.086 | 0.056 | 0.030 | 5.140 |
| BIG GULLY | MCLAREN SAND (VOLUNTARY UNIT NO. 1) | 9.860 | 5.70 | 2.30 | 8.00 | 0.562 | 0.227 | 0.789 | 0.771 | 0.117 | 19.482 |
| | WASECA SAND (VOLUNTARY UNIT NO. 1) | 3.693 | 1.80 | 0.90 | 2.70 | 0.066 | 0.033 | 0.099 | | | |
| | MCLAREN SAND (NON-UNIT) | 1.570 | 2.10 | 0.00 | 2.10 | 0.033 | 0.000 | 0.033 | 0.029 | 0.004 | 0.824 |
| | WASECA SAND (NON-UNIT) | 0.351 | 4.90 | 0.00 | 4.90 | 0.017 | 0.000 | 0.017 | 0.012 | 0.005 | 0.659 |
| BUZZARD | LLOYDMINSTER SAND | 5.237 | 4.30 | 0.00 | 4.30 | 0.225 | 0.000 | 0.225 | 0.114 | 0.111 | 17.077 |
| CELTIC | G.P. SAND | 33.017 | 4.80 | 0.30 | 5.10 | 1.585 | 0.099 | 1.684 | 0.307 | 2.832 | 107.413 |
| | SPARKY SAND | 46.126 | 1.30 | 0.00 | 1.30 | 0.600 | 0.000 | 0.600 | 0.141 | | 32.317 |
| | WASECA SAND | 90.361 | 1.30 | 0.30 | 1.60 | 1.175 | 0.271 | 1.446 | 0.423 | | 113.623 |
| | MANNVILLE SANDS (COMMINGLED) | 0.000 | 0.00 | 0.00 | 0.00 | 0.000 | 0.000 | 0.000 | 0.027 | | 2.439 |
| DEE VALLEY | WASECA SAND | 19.209 | 6.30 | 0.00 | 6.30 | 1.210 | 0.000 | 1.210 | 0.333 | 0.877 | 43.402 |
| DEE VALLEY EAST | SPARKY SAND | 16.345 | 0.70 | 0.00 | 0.70 | 0.114 | 0.000 | 0.114 | 0.026 | 0.088 | 3.407 |
| | WASECA SAND | 8.664 | 3.30 | 0.00 | 3.30 | 0.286 | 0.000 | 0.286 | 0.058 | 0.228 | 8.655 |
| DULWICH | SPARKY SAND | 14.996 | 8.00 | 3.80 | 11.80 | 1.200 | 0.570 | 1.770 | 1.677 | 0.093 | 17.383 |
| DULWICH NORTH | SPARKY SAND (N. DULWICH VOL UNIT) | 1.341 | 4.50 | 12.00 | 16.50 | 0.060 | 0.161 | 0.221 | 0.210 | 0.011 | 1.553 |
| | SPARKY SAND (NON-UNIT) | 0.898 | 0.20 | 0.00 | 0.20 | 0.002 | 0.000 | 0.002 | 0.001 | 0.001 | 0.162 |
| EDAM | WASECA SAND | 11.225 | 0.70 | 0.00 | 0.70 | 0.079 | 0.000 | 0.079 | 0.034 | 0.045 | 2.318 |
| EDAM WEST | SPARKY/G.P. SAND | 23.812 | 4.00 | 0.00 | 4.00 | 0.952 | 0.000 | 0.952 | 0.235 | 1.108 | 65.207 |
| | WASECA SAND | 12.756 | 4.20 | 0.00 | 4.20 | 0.536 | 0.000 | 0.536 | 0.090 | | 37.612 |
| | MANNVILLE SANDS (COMMINGLED) | 0.000 | 0.00 | 0.00 | 0.00 | 0.000 | 0.000 | 0.000 | 0.055 | | 15.374 |
| EPPING | G.P. SAND (S. EPPING UNIT) | 4.310 | 3.00 | 1.50 | 4.50 | 0.129 | 0.065 | 0.194 | 2.516 | 0.333 | 47.379 |
| | SPARKY SAND (S. EPPING UNIT) | 23.924 | 5.00 | 6.10 | 11.10 | 1.196 | 1.459 | 2.655 | | | |
| | SPARKY SAND (SW EPPING VOL UNIT 1) | 10.778 | 5.40 | 5.70 | 11.10 | 0.582 | 0.614 | 1.196 | 0.868 | 0.328 | 26.860 |
| | G.P. SAND (NON-UNIT) | 19.406 | 2.30 | 0.00 | 2.30 | 0.446 | 0.000 | 0.446 | 0.387 | 0.059 | 9.451 |
| | SPARKY SAND (NON-UNIT) | 37.289 | 4.90 | 0.00 | 4.90 | 1.827 | 0.000 | 1.827 | 1.591 | 0.236 | 43.782 |
| EYEHILL | CUMMINGS SAND | 10.228 | 1.00 | 2.60 | 3.60 | 0.102 | 0.266 | 0.368 | 0.143 | 0.225 | 19.427 |
| FOREST BANK | SPARKY SAND | 13.166 | 2.60 | 0.00 | 2.60 | 0.342 | 0.000 | 0.342 | 0.150 | 0.272 | 8.712 |
| | WASECA SAND | 8.960 | 3.30 | 0.00 | 3.30 | 0.296 | 0.000 | 0.296 | 0.154 | | 8.608 |
| | MANNVILLE SANDS (COMMINGLED) | 0.480 | 1.00 | 0.00 | 1.00 | 0.005 | 0.000 | 0.005 | 0.067 | | 4.257 |
| FREEMONT | SPARKY SAND | 3.433 | 4.80 | 0.00 | 4.80 | 0.165 | 0.000 | 0.165 | 0.094 | 0.071 | 8.179 |
| | WASECA SAND | 3.526 | 5.30 | 0.00 | 5.30 | 0.187 | 0.000 | 0.187 | 0.152 | 0.035 | 7.265 |
| FURNESS | SPARKY SAND | 11.305 | 5.10 | 0.00 | 5.10 | 0.577 | 0.000 | 0.577 | 0.401 | 0.176 | 20.686 |
| GOLDEN LAKE NORTH | SPARKY SAND (GOLDEN LAKE VOL UNIT) | 11.403 | 4.20 | 0.70 | 4.90 | 0.479 | 0.080 | 0.559 | 1.547 | 0.295 | 39.953 |
| | WASECA SAND (GOLDEN LAKE VOL UNIT) | 13.950 | 7.60 | 1.60 | 9.20 | 1.060 | 0.223 | 1.283 | | | |
| | SPARKY SAND (NON-UNIT) | 10.052 | 2.40 | 0.00 | 2.40 | 0.241 | 0.000 | 0.241 | 0.134 | 0.107 | 18.914 |
| | WASECA SAND (NON-UNIT) | 10.363 | 3.70 | 0.00 | 3.70 | 0.383 | 0.000 | 0.383 | 0.334 | 0.049 | 9.148 |
| GOLDEN LAKE SOUTH | SPARKY SAND | 42.132 | 1.00 | 1.80 | 2.80 | 0.421 | 0.758 | 1.179 | 0.666 | 0.513 | 29.762 |
| | WASECA SAND | 23.708 | 10.10 | 0.20 | 10.30 | 2.395 | 0.047 | 2.442 | 1.611 | 0.831 | 86.457 |
| GULLY LAKE | WASECA SAND (VOLUNTARY UNIT NO. 1) | 10.966 | 7.00 | 4.00 | 11.00 | 0.769 | 0.439 | 1.208 | 0.747 | 0.461 | 46.311 |
| | WASECA SAND (NON-UNIT) | 17.080 | 7.30 | 0.00 | 7.30 | 1.247 | 0.000 | 1.247 | 0.746 | 0.501 | 59.966 |
| LANDROSE | MCLAREN SAND | 5.051 | 2.50 | 0.00 | 2.50 | 0.126 | 0.000 | 0.126 | 0.122 | 0.004 | 1.192 |
| | WASECA SAND | 3.281 | 3.60 | 0.00 | 3.60 | 0.118 | 0.000 | 0.118 | 0.115 | 0.003 | 2.166 |
| LASHBURN | WASECA SAND (LASH. WASECA VOL UNIT) | 18.059 | 3.60 | 3.00 | 6.60 | 0.650 | 0.542 | 1.192 | 0.827 | 0.365 | 49.378 |
| | WASECA SAND (NON-UNIT) | 9.123 | 2.00 | 0.00 | 2.00 | 0.182 | 0.000 | 0.182 | 0.143 | 0.039 | 8.083 |
| LASHBURN SOUTH | SPARKY SAND | 2.712 | 1.30 | 0.00 | 1.30 | 0.035 | 0.000 | 0.035 | 0.027 | 0.008 | 1.880 |
| | WASECA SAND | 9.325 | 3.80 | 0.00 | 3.80 | 0.354 | 0.000 | 0.354 | 0.175 | 0.179 | 22.266 |
| LASHBURN WEST | SPARKY SAND | 11.082 | 0.70 | 0.00 | 0.70 | 0.078 | 0.000 | 0.078 | 0.040 | 0.038 | 3.548 |
| LLOYDMINSTER | SPARKY SAND | 4.125 | 4.10 | 0.00 | 4.10 | 0.169 | 0.000 | 0.169 | 0.148 | 0.021 | 6.704 |
| LONE ROCK | SPARKY SAND | 13.732 | 7.80 | 2.70 | 10.50 | 1.071 | 0.371 | 1.442 | 1.285 | 0.157 | 45.082 |

# OIL RESERVOIR DATA

| OIL IN PLACE $m^3/m^3$ | DEVELOPED AREA HECTARES | NET PAY METRES | AVERAGE POROSITY ---PER CENT--- | AVERAGE CONNATE WATER | FORMATION VOLUME FACTOR | OIL DENSITY $KG/M^3$ | PRODUCING DEPTH METRES | SYSTEM | DISCOVERY YEAR | POOL | PRODUCING HORIZON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | **AREA I - HEAVY** | |
| 0.299 | 4209 | 4.42 | 35.0 | 13.0 | 1.017 | 968 | 535 | CRETACEOUS | 1956 | ABERFELDY | SPARKY SAND (UNIT) |
| 0.299 | 1522 | 5.18 | 35.0 | 13.0 | 1.017 | – | – | CRETACEOUS | – | | SPARKY SAND (S. ABFDY SPKY VOL UNIT) |
| 0.299 | 1101 | 5.50 | 35.0 | 13.0 | 1.017 | – | – | CRETACEOUS | – | | SPARKY SAND (NON-UNIT) |
| 0.158 | 372 | 4.60 | 25.0 | 30.0 | 1.111 | 970 | 599 | CRETACEOUS | 1969 | BALDWINTON | SPARKY SAND |
| 0.300 | 1101 | 2.99 | 36.0 | 15.3 | 1.018 | 965 | 496 | CRETACEOUS | 1962 | BIG GULLY | MCLAREN SAND (VOLUNTARY UNIT NO. 1) |
| 0.300 | 518 | 2.38 | 36.0 | 15.3 | 1.018 | 965 | 479 | CRETACEOUS | 1962 | | WASECA SAND (VOLUNTARY UNIT NO. 1) |
| 0.300 | 146 | 3.59 | 36.0 | 15.3 | 1.018 | 961 | 496 | CRETACEOUS | – | | MCLAREN SAND (NON-UNIT) |
| 0.300 | 16 | 7.32 | 36.0 | 15.3 | 1.018 | 972 | 479 | CRETACEOUS | – | | WASECA SAND (NON-UNIT) |
| 0.158 | 809 | 4.11 | 25.0 | 30.0 | 1.111 | 971 | 579 | CRETACEOUS | 1978 | BUZZARD | LLOYDMINSTER SAND |
| 0.234 | 2637 | 5.34 | 35.0 | 31.0 | 1.030 | 989 | 477 | CRETACEOUS | 1966 | CELTIC | G.P. SAND |
| 0.264 | 4065 | 4.30 | 35.0 | 24.0 | 1.008 | 975 | 463 | CRETACEOUS | 1968 | | SPARKY SAND |
| 0.264 | 5043 | 6.79 | 35.0 | 24.0 | 1.008 | 968 | 451 | CRETACEOUS | 1968 | | WASECA SAND |
| 0.000 | 0 | 0.00 | 0.0 | 0.0 | 1.008 | – | – | CRETACEOUS | – | | MANNVILLE SANDS (COMMINGLED) |
| 0.290 | 1736 | 3.82 | 35.0 | 16.0 | 1.015 | 976 | 460 | CRETACEOUS | 1967 | DEE VALLEY | WASECA SAND |
| 0.290 | 1168 | 4.75 | 35.0 | 16.0 | 1.015 | 969 | 490 | CRETACEOUS | 1968 | DEE VALLEY EAST | SPARKY SAND |
| 0.290 | 1014 | 2.95 | 35.0 | 16.0 | 1.015 | 971 | 464 | CRETACEOUS | 1970 | | WASECA SAND |
| 0.259 | 1862 | 3.11 | 34.0 | 15.0 | 1.116 | 962 | 556 | CRETACEOUS | 1948 | DULWICH | SPARKY SAND |
| 0.300 | 113 | 3.96 | 35.0 | 13.0 | 1.016 | 957 | 551 | CRETACEOUS | 1954 | DULWICH NORTH | SPARKY SAND (N. DULWICH VOL UNIT) |
| 0.300 | 49 | 6.10 | 35.0 | 13.0 | 1.016 | – | – | CRETACEOUS | – | | SPARKY SAND (NON-UNIT) |
| 0.158 | 1008 | 7.07 | 25.0 | 30.0 | 1.111 | 988 | 431 | CRETACEOUS | 1972 | EDAM | WASECA SAND |
| 0.203 | 1457 | 8.07 | 30.0 | 25.0 | 1.111 | 973 | 467 | CRETACEOUS | 1962 | EDAM WEST | SPARKY/G.P. SAND |
| 0.203 | 1603 | 3.93 | 30.0 | 25.0 | 1.111 | 978 | 447 | CRETACEOUS | – | | WASECA SAND |
| 0.000 | 0 | 0.00 | 0.0 | 0.0 | 1.111 | 968 | – | CRETACEOUS | – | | MANNVILLE SANDS (COMMINGLED) |
| 0.281 | 1473 | 1.04 | 35.0 | 18.0 | 1.020 | 962 | 563 | CRETACEOUS | 1951 | EPPING | G.P. SAND (S. EPPING UNIT) |
| 0.281 | 1651 | 5.15 | 35.0 | 18.0 | 1.020 | 964 | 563 | CRETACEOUS | 1951 | | SPARKY SAND (S. EPPING UNIT) |
| 0.281 | 923 | 4.15 | 35.0 | 18.0 | 1.020 | – | – | CRETACEOUS | – | | SPARKY SAND (SW EPPING VOL UNIT 1) |
| 0.281 | 2299 | 3.00 | 35.0 | 18.0 | 1.020 | 962 | – | CRETACEOUS | – | | G.P. SAND (NON-UNIT) |
| 0.281 | 2881 | 4.60 | 35.0 | 18.0 | 1.020 | 968 | – | CRETACEOUS | – | | SPARKY SAND (NON-UNIT) |
| 0.277 | 378 | 9.82 | 34.0 | 16.0 | 1.031 | 970 | 746 | CRETACEOUS | 1971 | EYEHILL | CUMMINGS SAND |
| 0.290 | 1295 | 3.51 | 36.0 | 16.0 | 1.015 | 962 | 526 | CRETACEOUS | 1961 | FOREST BANK | SPARKY SAND |
| 0.290 | 1093 | 2.83 | 36.0 | 16.0 | 1.015 | 979 | 507 | CRETACEOUS | 1963 | | WASECA SAND |
| 0.172 | 97 | 2.87 | 26.0 | 30.0 | 1.015 | – | – | CRETACEOUS | – | | MANNVILLE SANDS (COMMINGLED) |
| 0.266 | 453 | 2.85 | 36.0 | 20.0 | 1.053 | 963 | 636 | CRETACEOUS | 1976 | FREEMONT | SPARKY SAND |
| 0.266 | 421 | 3.15 | 36.0 | 20.0 | 1.053 | 956 | 620 | CRETACEOUS | 1976 | | WASECA SAND |
| 0.284 | 745 | 5.34 | 34.0 | 15.0 | 1.017 | 967 | 566 | CRETACEOUS | 1970 | FURNESS | SPARKY SAND |
| 0.278 | 1196 | 3.43 | 36.0 | 20.0 | 1.009 | 977 | 506 | CRETACEOUS | 1964 | GOLDEN LAKE NORTH | SPARKY SAND (GOLDEN LAKE VOL UNIT) |
| 0.290 | 1196 | 4.02 | 36.0 | 16.0 | 1.015 | 964 | 481 | CRETACEOUS | 1964 | | WASECA SAND (GOLDEN LAKE VOL UNIT) |
| 0.278 | 967 | 3.67 | 36.0 | 20.0 | 1.009 | 970 | – | CRETACEOUS | – | | SPARKY SAND (NON-UNIT) |
| 0.290 | 866 | 4.17 | 35.0 | 16.0 | 1.015 | 963 | – | CRETACEOUS | – | | WASECA SAND (NON-UNIT) |
| 0.284 | 2913 | 5.10 | 35.0 | 16.0 | 1.012 | 976 | 460 | CRETACEOUS | 1964 | GOLDEN LAKE SOUTH | SPARKY SAND |
| 0.290 | 2784 | 2.94 | 35.0 | 16.0 | 1.015 | 966 | 473 | CRETACEOUS | 1964 | | WASECA SAND |
| 0.290 | 874 | 4.33 | 36.7 | 16.0 | 1.033 | 963 | 472 | CRETACEOUS | 1949 | GULLY LAKE | WASECA SAND (VOLUNTARY UNIT NO. 1) |
| 0.290 | 1279 | 4.80 | 36.7 | 16.0 | 1.033 | 969 | – | CRETACEOUS | – | | WASECA SAND (NON-UNIT) |
| 0.226 | 534 | 4.15 | 30.0 | 20.0 | 1.053 | 961 | 513 | CRETACEOUS | 1950 | LANDROSE | MCLAREN SAND |
| 0.290 | 308 | 3.67 | 36.0 | 18.0 | 1.017 | 963 | 521 | CRETACEOUS | 1950 | | WASECA SAND |
| 0.230 | 1263 | 6.22 | 30.0 | 21.0 | 1.031 | 962 | 518 | CRETACEOUS | 1960 | LASHBURN | WASECA SAND (LASH. WASECA VOL UNIT) |
| 0.293 | 647 | 4.82 | 36.0 | 15.0 | 1.017 | 963 | – | CRETACEOUS | – | | WASECA SAND (NON-UNIT) |
| 0.275 | 421 | 2.34 | 36.0 | 20.0 | 1.017 | 983 | 534 | CRETACEOUS | 1967 | LASHBURN SOUTH | SPARKY SAND |
| 0.293 | 696 | 4.56 | 35.0 | 15.0 | 1.017 | 979 | 524 | CRETACEOUS | 1971 | | WASECA SAND |
| 0.156 | 1561 | 4.54 | 25.0 | 30.0 | 1.111 | 991 | 537 | CRETACEOUS | 1979 | LASHBURN WEST | SPARKY SAND |
| 0.299 | 243 | 5.67 | 36.0 | 13.0 | 1.017 | 965 | 556 | CRETACEOUS | 1952 | LLOYDMINSTER | SPARKY SAND |
| 0.266 | 939 | 5.49 | 33.0 | 15.0 | 1.053 | 960 | 572 | CRETACEOUS | 1947 | LONE ROCK | SPARKY SAND |

# OIL RESERVES

| POOL | PRODUCING HORIZON | INITIAL OIL IN PLACE MILLION CUBIC METRES | ESTIMATED RECOVERY PRIMARY | ESTIMATED RECOVERY ENHANCED | ESTIMATED RECOVERY TOTAL | INITIAL RESERVES PRIMARY | INITIAL RESERVES ENHANCED | INITIAL RESERVES TOTAL | CUMULATIVE PROD. DEC 31/86 | REMAINING RESERVES | 1986 PROD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ----------PER CENT---------- | | | ----------------MILLION CUBIC METRES---------------- | | | | | 1000 m$^3$ |
| LOW LAKE | WASECA SAND | 1.320 | 5.50 | 0.00 | 5.50 | 0.073 | 0.000 | 0.073 | 0.059 | 0.014 | 3.947 |
| MACKLIN | SPARKY SAND | 9.437 | 5.70 | 0.00 | 5.70 | 0.538 | 0.000 | 0.538 | 0.349 | 0.189 | 20.742 |
| MAIDSTONE | MCLAREN SAND | 6.140 | 8.90 | 0.00 | 8.90 | 0.546 | 0.000 | 0.546 | 0.159 | 0.387 | 25.642 |
| | WASECA SAND | 1.883 | 4.20 | 0.00 | 4.20 | 0.079 | 0.000 | 0.079 | 0.034 | 0.045 | 7.349 |
| MANITO LAKE | SPARKY SAND | 6.596 | 12.6 | 0.00 | 12.60 | 0.831 | 0.000 | 0.831 | 0.189 | 0.642 | 49.171 |
| MARSDEN | SPARKY SAND | 0.838 | 14.00 | 0.00 | 14.00 | 0.117 | 0.000 | 0.117 | 0.106 | 0.011 | 2.838 |
| MARSDEN SOUTH | SPARKY SAND (VOL UNIT NO. 1) | 10.830 | 4.60 | 10.80 | 15.40 | 0.498 | 1.170 | 1.668 | 0.333 | 1.335 | 45.270 |
| | SPARKY SAND (NON-UNIT) | 2.710 | 9.80 | 0.00 | 9.80 | 0.266 | 0.000 | 0.266 | 0.073 | 0.193 | 22.003 |
| NEILBURG | MCLAREN SAND | 7.917 | 11.70 | 0.00 | 11.70 | 0.926 | 0.000 | 0.926 | 0.363 | 0.563 | 75.964 |
| NORTHMINSTER | SPARKY SAND (NORTH. SPARKY VOL UNIT) | 10.939 | 3.50 | 4.00 | 7.50 | 0.383 | 0.438 | 0.821 | 0.764 | 0.057 | 14.227 |
| | SPARKY SAND (NON-UNIT) | 8.014 | 1.70 | 0.20 | 1.90 | 0.136 | 0.016 | 0.152 | 0.103 | 0.049 | 11.639 |
| NORTHMINSTER NORTH | G.P. SAND | 1.377 | 0.90 | 0.00 | 0.90 | 0.012 | 0.000 | 0.012 | 0.011 | 0.001 | 0.263 |
| | SPARKY SAND | 5.234 | 4.20 | 0.00 | 4.20 | 0.220 | 0.000 | 0.220 | 0.074 | 0.146 | 9.261 |
| PIKES PEAK | G.P. SAND | 3.313 | 8.70 | 0.00 | 8.70 | 0.288 | 0.000 | 0.288 | 0.194 | 0.094 | 15.885 |
| | SPARKY SAND | 1.584 | 0.80 | 0.00 | 0.80 | 0.013 | 0.000 | 0.013 | 0.009 | 0.004 | 0.574 |
| | WASECA SAND | 12.482 | 3.00 | 11.40 | 14.40 | 0.374 | 1.423 | 1.797 | 1.156 | 0.641 | 290.893 |
| RUSH LAKE | MANNVILLE SANDS (COMMINGLED) | 0.000 | 0.00 | 0.00 | 0.00 | 0.000 | 0.000 | 0.000 | 0.004 | 0.175 | 3.926 |
| | SPARKY SAND | 5.547 | 3.20 | 0.00 | 3.20 | 0.178 | 0.000 | 0.178 | 0.074 | | 18.689 |
| | WASECA SAND | 3.659 | 3.20 | 0.00 | 3.20 | 0.117 | 0.000 | 0.117 | 0.042 | | 10.516 |
| SALT LAKE | LLOYDMINSTER SAND | 5.130 | 18.30 | 0.00 | 18.30 | 0.939 | 0.000 | 0.939 | 0.157 | 0.782 | 96.094 |
| SENLAC | LLOYDMINSTER SAND | 10.900 | 6.40 | 0.00 | 6.40 | 0.698 | 0.000 | 0.698 | 0.440 | 0.258 | 69.715 |
| SILVERDALE | SPARKY SAND | 18.933 | 6.50 | 0.80 | 7.30 | 1.231 | 0.151 | 1.382 | 1.272 | 0.110 | 24.600 |
| STANDARD HILL | WASECA SAND | 19.411 | 8.40 | 0.00 | 8.40 | 1.631 | 0.000 | 1.631 | 0.987 | 0.644 | 87.564 |
| TANGLEFLAGS | LLOYDMINSTER SAND (VOL UNIT NO. 2) | 4.001 | 5.50 | 3.20 | 8.70 | 0.220 | 0.128 | 0.348 | 0.237 | 0.111 | 14.841 |
| | G.P. SAND (VOL UNIT NO. 3) | 4.857 | 5.60 | 0.00 | 5.60 | 0.272 | 0.000 | 0.272 | 0.131 | 0.141 | 17.428 |
| | LLOYDMINSTER SD (VOL UNIT NO. 3) | 5.743 | 4.90 | 0.00 | 4.90 | 0.281 | 0.000 | 0.281 | 0.184 | 0.097 | 14.751 |
| | MCLAREN SAND (VOL UNIT NO. 3) | 0.212 | 5.40 | 0.00 | 5.40 | 0.011 | 0.000 | 0.011 | 0.008 | 0.003 | 0.570 |
| | SPARKY SAND (VOL UNIT NO. 3) | 4.857 | 1.20 | 0.00 | 1.20 | 0.058 | 0.000 | 0.058 | 0.027 | 0.031 | 3.387 |
| | G.P. SAND (NON-UNIT) | 42.669 | 6.50 | 0.78 | 7.28 | 2.773 | 0.333 | 3.106 | 1.344 | 3.250 | 116.678 |
| | LLOYDMINSTER SAND (NON-UNIT) | 42.795 | 4.30 | 0.00 | 4.30 | 1.840 | 0.000 | 1.840 | 0.836 | | 69.771 |
| | MCLAREN SAND (NON-UNIT) | 5.306 | 3.90 | 0.00 | 3.90 | 0.207 | 0.000 | 0.207 | 0.059 | | 5.896 |
| | SPARKY SAND (NON-UNIT) | 12.050 | 7.00 | 0.00 | 7.00 | 0.844 | 0.000 | 0.844 | 0.230 | | 25.507 |
| | MANNVILLE SD (COMMINGLED) (NON-UNIT) | 0.000 | 0.00 | 0.00 | 0.00 | 0.000 | 0.000 | 0.000 | 0.278 | | 20.704 |
| TANGLEFLAGS EAST | MCLAREN SAND | 1.879 | 5.90 | 0.00 | 5.90 | 0.111 | 0.000 | 0.111 | 0.060 | 0.051 | 6.923 |
| TANGLEFLAGS NORTH | CUMMINGS SAND | 5.382 | 2.80 | 0.00 | 2.80 | 0.151 | 0.000 | 0.151 | 0.072 | 0.079 | 8.906 |
| | G.P. SAND | 3.656 | 0.40 | 0.00 | 0.40 | 0.015 | 0.000 | 0.015 | 0.012 | 0.003 | 1.868 |
| | LLOYDMINSTER SAND | 23.109 | 2.30 | 0.00 | 2.30 | 0.532 | 0.000 | 0.532 | 0.234 | 0.298 | 34.383 |
| TANGLEFLAGS WEST | G.P. SAND | 2.401 | 0.80 | 0.00 | 0.80 | 0.019 | 0.000 | 0.019 | 0.011 | 0.008 | 1.440 |
| | LLOYDMINSTER SAND | 4.717 | 3.40 | 0.00 | 3.40 | 0.160 | 0.000 | 0.160 | 0.080 | 0.080 | 12.064 |
| | SPARKY SAND | 1.909 | 4.40 | 0.00 | 4.40 | 0.084 | 0.000 | 0.084 | 0.049 | 0.035 | 5.226 |
| WESTHAZEL | G.P.SAND | 8.368 | 2.50 | 0.00 | 2.50 | 0.209 | 0.000 | 0.209 | 0.071 | 0.138 | 16.196 |
| | SPARKY SAND | 8.360 | 3.30 | 0.00 | 3.30 | 0.276 | 0.000 | 0.276 | 0.119 | 0.157 | 21.783 |
| WINTER | CUMMINGS SAND | 4.577 | 0.55 | 0.00 | 0.55 | 0.025 | 0.000 | 0.025 | 0.024 | 0.001 | 1.597 |
| MISCELLANEOUS | BASAL MANNVILLE SAND | 0.028 | 2.00 | 0.00 | 2.00 | 0.001 | 0.000 | 0.001 | 0.001 | 0.000 | 0.000 |
| | COLONY SAND | 10.981 | 1.20 | 0.00 | 1.20 | 0.132 | 0.000 | 0.132 | 0.048 | 0.084 | 10.641 |
| | CUMMINGS SAND | 18.189 | 0.40 | 0.00 | 0.40 | 0.073 | 0.000 | 0.073 | 0.051 | 0.022 | 5.288 |
| | DINA SAND | 3.856 | 0.30 | 0.00 | 0.30 | 0.012 | 0.000 | 0.012 | 0.006 | 0.006 | 1.115 |
| | G.P. SAND | 34.468 | 1.70 | 0.00 | 1.70 | 0.586 | 0.000 | 0.586 | 0.335 | 0.251 | 38.068 |
| | LLOYDMINSTER SAND | 20.181 | 0.97 | 0.82 | 1.79 | 0.196 | 0.165 | 0.361 | 0.274 | 0.087 | 38.164 |
| | MANNVILLE SAND | 0.287 | 2.70 | 0.00 | 2.70 | 0.008 | 0.000 | 0.008 | 0.004 | 0.004 | 0.514 |
| | MANNVILLE SANDS (COMMINGLED) | 20.902 | 1.50 | 0.00 | 1.50 | 0.314 | 0.000 | 0.314 | 0.207 | 0.107 | 20.123 |
| | MCLAREN SAND | 22.945 | 1.20 | 0.00 | 1.20 | 0.275 | 0.000 | 0.275 | 0.143 | 0.132 | 22.347 |
| | REX SAND | 7.011 | 0.90 | 0.00 | 0.90 | 0.063 | 0.000 | 0.063 | 0.033 | 0.030 | 4.696 |
| | SPARKY SAND | 60.440 | 2.75 | 0.00 | 2.75 | 1.662 | 0.000 | 1.662 | 0.793 | 0.869 | 120.213 |

# OIL RESERVOIR DATA

| OIL IN PLACE | DEVELOPED AREA | NET PAY | AVERAGE POROSITY | AVERAGE CONNATE WATER | FORMATION VOLUME | OIL DENSITY | PRODUCING DEPTH | | DISCOVERY | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $m^3/m^3$ | HECTARES | METRES | —PER CENT— | | FACTOR | KG/M$^3$ | METRES | SYSTEM | YEAR | POOL | PRODUCING HORIZON |
| 0.248 | 146 | 3.65 | 36.0 | 30.0 | 1.017 | 971 | 509 | CRETACEOUS | 1950 | LOW LAKE | WASECA SAND |
| 0.261 | 1325 | 2.73 | 35.0 | 23.0 | 1.033 | 947 | 712 | CRETACEOUS | 1976 | MACKLIN | SPARKY SAND |
| 0.158 | 1471 | 2.65 | 25.0 | 30.0 | 1.111 | 983 | 500 | CRETACEOUS | 1978 | MAIDSTONE | MCLAREN SAND |
| 0.158 | 421 | 2.64 | 25.0 | 30.0 | 1.111 | 973 | 503 | CRETACEOUS | 1961 | | WASECA SAND |
| 0.158 | 1034 | 4.06 | 25.0 | 30.0 | 1.111 | 965 | 605 | CRETACEOUS | 1970 | MANITO LAKE | SPARKY SAND |
| 0.266 | 60 | 4.57 | 35.0 | 20.0 | 1.053 | 982 | 608 | CRETACEOUS | 1949 | MARSDEN | SPARKY SAND |
| 0.218 | 518 | 9.58 | 30.0 | 25.0 | 1.031 | 946 | 625 | CRETACEOUS | 1979 | MARSDEN SOUTH | SPARKY SAND (VOL UNIT NO. 1) |
| 0.218 | 194 | 6.40 | 30.0 | 25.0 | 1.031 | 946 | 625 | CRETACEOUS | – | | SPARKY SAND (NON-UNIT) |
| 0.158 | 1279 | 3.93 | 25.0 | 30.0 | 1.111 | 964 | 570 | CRETACEOUS | 1978 | NEILBURG | MCLAREN SAND |
| 0.284 | 987 | 3.90 | 34.0 | 15.0 | 1.017 | 976 | 541 | CRETACEOUS | 1959 | NORTHMINSTER | SPARKY SAND (NORTH. SPARKY VOL UNIT) |
| 0.284 | 470 | 6.00 | 34.0 | 15.0 | 1.017 | 967 | – | CRETACEOUS | – | | SPARKY SAND (NON-UNIT) |
| 0.156 | 178 | 4.91 | 25.0 | 30.0 | 1.111 | 984 | 543 | CRETACEOUS | 1961 | NORTHMINSTER NORTH | G.P. SAND |
| 0.156 | 707 | 4.70 | 25.0 | 30.0 | 1.111 | 970 | 524 | CRETACEOUS | 1961 | | SPARKY SAND |
| 0.233 | 356 | 4.00 | 35.0 | 30.0 | 1.053 | 970 | 530 | CRETACEOUS | 1970 | PIKES PEAK | G.P. SAND |
| 0.233 | 227 | 3.00 | 35.0 | 30.0 | 1.053 | 984 | 515 | CRETACEOUS | 1973 | | SPARKY SAND |
| 0.275 | 534 | 8.50 | 33.0 | 15.0 | 1.020 | 978 | 497 | CRETACEOUS | 1970 | | WASECA SAND |
| 0.000 | 0 | 0.00 | 0.0 | 0.0 | 1.111 | 978 | 478 | CRETACEOUS | 1971 | RUSH LAKE | MANNVILLE SANDS (COMMINGLED) |
| 0.158 | 696 | 5.06 | 25.0 | 30.0 | 1.111 | 978 | 478 | CRETACEOUS | 1971 | | SPARKY SAND |
| 0.158 | 534 | 4.35 | 25.0 | 30.0 | 1.111 | 977 | 450 | CRETACEOUS | 1971 | | WASECA SAND |
| 0.158 | 761 | 4.26 | 25.0 | 30.0 | 1.111 | 970 | 737 | CRETACEOUS | 1965 | SALT LAKE | LLOYDMINSTER SAND |
| 0.171 | 1339 | 4.75 | 28.0 | 32.0 | 1.111 | 968 | 787 | CRETACEOUS | 1960 | SENLAC | LLOYDMINSTER SAND |
| 0.258 | 1939 | 3.78 | 34.0 | 20.0 | 1.053 | 965 | 584 | CRETACEOUS | 1968 | SILVERDALE | SPARKY SAND |
| 0.281 | 1927 | 3.58 | 34.0 | 16.0 | 1.015 | 968 | 472 | CRETACEOUS | 1963 | STANDARD HILL | WASECA SAND |
| 0.232 | 421 | 4.09 | 30.0 | 21.0 | 1.020 | 959 | 532 | CRETACEOUS | 1965 | TANGLEFLAGS | LLOYDMINSTER SAND (VOL UNIT NO. 2) |
| 0.268 | 567 | 3.20 | 33.3 | 18.0 | 1.020 | 969 | 490 | CRETACEOUS | 1971 | | G.P. SAND (VOL UNIT NO. 3) |
| 0.205 | 833 | 3.36 | 30.6 | 31.6 | 1.020 | 960 | 532 | CRETACEOUS | – | | LLOYDMINSTER SD (VOL UNIT NO. 3) |
| 0.233 | 32 | 2.85 | 35.0 | 30.0 | 1.053 | 970 | 455 | CRETACEOUS | – | | MCLAREN SAND (VOL UNIT NO. 3) |
| 0.238 | 627 | 3.25 | 35.0 | 30.0 | 1.028 | 970 | 511 | CRETACEOUS | 1969 | | SPARKY SAND (VOL UNIT NO. 3) |
| 0.268 | 3008 | 5.30 | 35.0 | 22.0 | 1.020 | 970 | 492 | CRETACEOUS | – | | G.P. SAND (NON-UNIT) |
| 0.257 | 4376 | 3.80 | 35.0 | 25.0 | 1.020 | 962 | – | CRETACEOUS | – | | LLOYDMINSTER SAND (NON-UNIT) |
| 0.233 | 691 | 3.30 | 35.0 | 30.0 | 1.053 | 970 | 473 | CRETACEOUS | – | | MCLAREN SAND (NON-UNIT) |
| 0.238 | 1595 | 3.17 | 35.0 | 30.0 | 1.028 | 969 | 511 | CRETACEOUS | – | | SPARKY SAND (NON-UNIT) |
| 0.000 | 0 | 0.00 | 0.0 | 0.0 | 1.020 | 984 | – | CRETACEOUS | – | | MANNVILLE SD (COMMINGLED) (NON-UNIT) |
| 0.156 | 291 | 4.10 | 25.0 | 30.0 | 1.111 | 973 | 359 | CRETACEOUS | 1978 | TANGLEFLAGS EAST | MCLAREN SAND |
| 0.240 | 291 | 7.70 | 35.0 | 30.0 | 1.020 | 977 | 518 | CRETACEOUS | 1976 | TANGLEFLAGS NORTH | CUMMINGS SAND |
| 0.233 | 291 | 5.40 | 35.0 | 30.0 | 1.053 | 978 | 450 | CRETACEOUS | 1977 | | G.P. SAND |
| 0.240 | 1069 | 9.00 | 35.0 | 30.0 | 1.020 | 970 | 515 | CRETACEOUS | 1977 | | LLOYDMINSTER SAND |
| 0.268 | 130 | 6.90 | 35.0 | 22.0 | 1.020 | 979 | 516 | CRETACEOUS | 1972 | TANGLEFLAGS WEST | G.P. SAND |
| 0.257 | 470 | 3.90 | 35.0 | 25.0 | 1.020 | 967 | 583 | CRETACEOUS | 1972 | | LLOYDMINSTER SAND |
| 0.238 | 178 | 4.50 | 35.0 | 30.0 | 1.028 | 975 | 498 | CRETACEOUS | 1972 | | SPARKY SAND |
| 0.233 | 486 | 7.40 | 35.0 | 30.0 | 1.053 | 977 | 485 | CRETACEOUS | 1971 | WESTHAZEL | G.P.SAND |
| 0.221 | 729 | 5.20 | 35.0 | 30.0 | 1.111 | 967 | 455 | CRETACEOUS | 1969 | | SPARKY SAND |
| 0.158 | 259 | 11.22 | 25.0 | 30.0 | 1.111 | 960 | 660 | CRETACEOUS | 1960 | WINTER | CUMMINGS SAND |
| 0.233 | 8 | 1.52 | 35.0 | 30.0 | 1.053 | – | – | CRETACEOUS | – | MISCELLANEOUS | BASAL MANNVILLE SAND |
| 0.233 | 874 | 5.40 | 35.0 | 30.0 | 1.053 | – | – | CRETACEOUS | – | | COLONY SAND |
| 0.233 | 1133 | 6.90 | 35.0 | 30.0 | 1.053 | – | – | CRETACEOUS | – | | CUMMINGS SAND |
| 0.233 | 227 | 7.30 | 35.0 | 30.0 | 1.053 | – | – | CRETACEOUS | – | | DINA SAND |
| 0.233 | 2871 | 5.16 | 35.0 | 30.0 | 1.053 | – | – | CRETACEOUS | – | | G.P. SAND |
| 0.233 | 1666 | 5.20 | 35.0 | 30.0 | 1.053 | – | – | CRETACEOUS | – | | LLOYDMINSTER SAND |
| 0.158 | 32 | 5.70 | 25.0 | 30.0 | 1.111 | – | – | CRETACEOUS | – | | MANNVILLE SAND |
| 0.233 | 1214 | 7.40 | 35.0 | 30.0 | 1.053 | – | – | CRETACEOUS | – | | MANNVILLE SANDS (COMMINGLED) |
| 0.233 | 2348 | 4.20 | 35.0 | 30.0 | 1.053 | – | – | CRETACEOUS | – | | MCLAREN SAND |
| 0.233 | 486 | 6.20 | 35.0 | 30.0 | 1.053 | – | – | CRETACEOUS | – | | REX SAND |
| 0.233 | 5958 | 4.36 | 35.0 | 30.0 | 1.053 | – | – | CRETACEOUS | – | | SPARKY SAND |

# OIL RESERVES

| POOL | PRODUCING HORIZON | INITIAL OIL IN PLACE MILLION CUBIC METRES | ESTIMATED RECOVERY |  |  | INITIAL RESERVES |  |  | CUMULATIVE PROD. | REMAINING | 1986 |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  | PRIMARY | ENHANCED | TOTAL | PRIMARY | ENHANCED | TOTAL | DEC 31/86 | RESERVES | PROD |
|  |  |  | -----------PER CENT----------- |  |  | ------------------MILLION CUBIC METRES------------------ |  |  |  |  | 1000 $m^3$ |
| MISCELLANEOUS | WASECA SAND | 37.717 | 2.20 | 0.00 | 2.20 | 0.830 | 0.000 | 0.830 | 0.329 | 0.501 | 75.218 |
|  | **TOTAL AREA I HEAVY** | **1340.620** |  |  |  | **53.050** | **11.399** | **64.449** | **39.958** | **24.491** | **2955.841** |
| **AREA II - HEAVY** |  |  |  |  |  |  |  |  |  |  |  |
| ALSASK | BASAL MANNVILLE SAND | 0.178 | 9.70 | 0.00 | 9.70 | 0.017 | 0.000 | 0.017 | 0.011 | 0.006 | 0.830 |
| BUFFALO COULEE | BAKKEN SAND | 5.082 | 2.50 | 7.80 | 10.30 | 0.127 | 0.396 | 0.523 | 0.275 | 0.248 | 21.216 |
| BUFF. COULEE NORTH | BAKKEN SAND | 3.769 | 2.20 | 0.00 | 2.20 | 0.083 | 0.000 | 0.083 | 0.066 | 0.017 | 4.815 |
| CACTUS LAKE | BASAL MANNVILLE-BAKKEN SAND | 29.090 | 7.70 | 0.00 | 7.70 | 2.240 | 0.000 | 2.240 | 1.268 | 0.972 | 187.942 |
| COLEVILLE | BAKKEN SAND | 50.877 | 4.60 | 14.80 | 19.40 | 2.340 | 7.530 | 9.870 | 6.719 | 3.151 | 156.229 |
|  | MANNVILLE SAND | 1.517 | 5.50 | 0.00 | 5.50 | 0.083 | 0.000 | 0.083 | 0.052 | 0.031 | 8.834 |
| COLEVILLE SOUTH | BAKKEN SANDS | 8.689 | 5.90 | 0.00 | 5.90 | 0.513 | 0.000 | 0.513 | 0.098 | 0.415 | 35.461 |
|  | MANNVILLE | 2.066 | 3.40 | 0.00 | 3.40 | 0.070 | 0.000 | 0.070 | 0.013 | 0.057 | 4.534 |
| COSINE LAKE | LLOYDMINSTER SAND | 7.487 | 0.70 | 0.00 | 0.70 | 0.052 | 0.000 | 0.052 | 0.040 | 0.012 | 5.394 |
| COURT | BAKKEN SAND | 11.741 | 6.00 | 0.00 | 6.00 | 0.704 | 0.000 | 0.704 | 0.213 | 0.491 | 66.852 |
| DRUID | MANNVILLE SANDS | 1.946 | 2.00 | 0.00 | 2.00 | 0.039 | 0.000 | 0.039 | 0.018 | 0.021 | 2.086 |
| FUSILIER | BAKKEN SAND | 3.239 | 11.10 | 0.00 | 11.10 | 0.360 | 0.000 | 0.360 | 0.180 | 0.180 | 15.528 |
| HEARTS HILL | BAKKEN SAND | 2.632 | 4.70 | 0.00 | 4.70 | 0.124 | 0.000 | 0.124 | 0.038 | 0.086 | 14.287 |
| HOOSIER | BAKKEN SAND (VOLUNTARY UNIT NO. 1) | 3.128 | 4.00 | 3.80 | 7.80 | 0.125 | 0.119 | 0.244 | 0.152 | 0.092 | 11.828 |
|  | BAKKEN SAND (NON-UNIT) | 5.178 | 5.30 | 0.00 | 5.30 | 0.274 | 0.000 | 0.274 | 0.164 | 0.110 | 14.270 |
| LOVERNA | DETRITAL | 2.493 | 4.50 | 0.00 | 4.50 | 0.112 | 0.000 | 0.112 | 0.081 | 0.031 | 3.005 |
| LUSELAND | BAKKEN SAND | 14.892 | 3.50 | 0.00 | 3.50 | 0.521 | 0.000 | 0.521 | 0.143 | 0.378 | 34.200 |
| NORTH HOOSIER | BAKKEN SAND (VOLUNTARY UNIT) | 8.617 | 2.30 | 10.80 | 13.10 | 0.198 | 0.931 | 1.129 | 0.867 | 0.262 | 25.111 |
|  | BAKKEN SAND (NON-UNIT) | 3.536 | 6.30 | 0.00 | 6.30 | 0.223 | 0.000 | 0.223 | 0.166 | 0.057 | 9.150 |
| NORTH HOOSIER | BASAL MANNVILLE SAND (VOL UNIT) | 4.147 | 6.00 | 14.00 | 20.00 | 0.249 | 0.581 | 0.830 | 0.599 | 0.231 | 28.073 |
|  | BASAL MANNVILLE SAND (NON-UNIT) | 0.187 | 6.80 | 0.00 | 6.80 | 0.013 | 0.000 | 0.013 | 0.002 | 0.011 | 1.658 |
| NORTH SMILEY | BAKKEN SAND | 1.193 | 4.00 | 0.00 | 4.00 | 0.048 | 0.000 | 0.048 | 0.018 | 0.030 | 5.146 |
| PLOVER LAKE | BAKKEN SAND | 11.511 | 2.90 | 0.00 | 2.90 | 0.334 | 0.000 | 0.334 | 0.181 | 0.153 | 29.520 |
| MISCELLANEOUS | BAKKEN SAND | 12.792 | 3.30 | 0.00 | 3.30 | 0.422 | 0.000 | 0.422 | 0.143 | 0.279 | 37.004 |
|  | BASAL MANNVILLE SAND | 1.550 | 1.36 | 0.00 | 1.36 | 0.021 | 0.000 | 0.021 | 0.017 | 0.004 | 2.845 |
|  | BIRDBEAR | 0.098 | 5.60 | 0.00 | 5.60 | 0.005 | 0.000 | 0.005 | 0.003 | 0.002 | 0.835 |
|  | DETRITAL | 4.396 | 1.80 | 0.00 | 1.80 | 0.079 | 0.000 | 0.079 | 0.033 | 0.046 | 10.821 |
|  | LLOYDMINISTER SAND | 0.282 | 3.30 | 0.00 | 3.30 | 0.009 | 0.000 | 0.009 | 0.005 | 0.004 | 0.735 |
|  | MANNVILLE SAND | 10.680 | 3.30 | 0.00 | 3.30 | 0.352 | 0.000 | 0.352 | 0.093 | 0.259 | 23.397 |
|  | MCLAREN SAND | 0.249 | 11.00 | 0.00 | 11.00 | 0.027 | 0.000 | 0.027 | 0.006 | 0.021 | 3.343 |
|  | SPARKY SAND | 0.079 | 16.60 | 0.00 | 16.60 | 0.013 | 0.000 | 0.013 | 0.002 | 0.011 | 1.574 |
|  | **TOTAL AREA II HEAVY** | **213.319** |  |  |  | **9.777** | **9.557** | **19.334** | **11.666** | **7.668** | **766.323** |
| **AREA II - LIGHT** |  |  |  |  |  |  |  |  |  |  |  |
| AVON HILL | VIKING (VOL UNIT) | 4.493 | 5.20 | 10.00 | 15.20 | 0.234 | 0.449 | 0.683 | 0.168 | 0.515 | 18.332 |
|  | VIKING (NON-UNIT) | 6.699 | 5.80 | 0.00 | 5.80 | 0.389 | 0.000 | 0.389 | 0.290 | 0.099 | 29.652 |
| DODSLAND | VIKING SAND (EAGLE LAKE UNIT) | 12.724 | 15.60 | 8.00 | 23.60 | 1.985 | 1.018 | 3.003 | 1.996 | 1.007 | 96.466 |
|  | VIKING SAND (EAST DODS. VOL UNIT) | 24.431 | 5.00 | 14.40 | 19.40 | 1.222 | 3.518 | 4.740 | 0.795 | 3.945 | 42.024 |
|  | VIKING SAND (GLENEATH UNIT) | 9.546 | 13.40 | 16.70 | 30.10 | 1.279 | 1.594 | 2.873 | 1.865 | 1.008 | 76.220 |
|  | VIKING SAND (GLENEATH S. VOL UNIT) | 0.396 | 15.60 | 7.30 | 22.90 | 0.062 | 0.029 | 0.091 | 0.037 | 0.054 | 2.405 |
|  | VIKING SAND (KIYIU LAKE VOL UNIT) | 2.323 | 6.50 | 0.00 | 6.50 | 0.151 | 0.000 | 0.151 | 0.052 | 0.099 | 14.966 |
|  | VIKING SAND (NORTH DODS. VOL UNIT) | 7.253 | 4.60 | 11.00 | 15.60 | 0.334 | 0.798 | 1.132 | 0.173 | 0.959 | 24.406 |
|  | VIKING SAND (NON-UNIT) | 50.425 | 6.40 | 0.40 | 6.80 | 3.227 | 0.202 | 3.429 | 2.214 | 1.215 | 231.872 |
| EUREKA | VIKING (NORTH EUREKA UNIT) | 6.709 | 10.00 | 7.10 | 17.10 | 0.671 | 0.476 | 1.147 | 1.068 | 0.079 | 12.406 |
|  | VIKING (SOUTH EUREKA UNIT) | 6.811 | 9.50 | 10.30 | 19.80 | 0.647 | 0.702 | 1.349 | 1.120 | 0.229 | 27.322 |
|  | VIKING (NON-UNIT) | 6.845 | 2.10 | 0.00 | 2.10 | 0.144 | 0.000 | 0.144 | 0.098 | 0.046 | 15.203 |

# OIL RESERVOIR DATA

| OIL IN PLACE $m^3/m^3$ | DEVELOPED AREA HECTARES | NET PAY METRES | AVERAGE POROSITY —PER CENT— | AVERAGE CONNATE WATER —PER CENT— | FORMATION VOLUME FACTOR | OIL DENSITY $KG/M^3$ | PRODUCING DEPTH METRES | SYSTEM | DISCOVERY YEAR | POOL | PRODUCING HORIZON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.233 | 3076 | 5.27 | 35.0 | 30.0 | 1.053 | – | – | CRETACEOUS | – | MISCELLANEOUS | WASECA SAND |
| | | | | | | | | | | **AREA II - HEAVY** | |
| 0.091 | 49 | 3.96 | 26.9 | 55.0 | 1.333 | 953 | 818 | CRETACEOUS | 1968 | ALSASK | BASAL MANNVILLE SAND |
| 0.190 | 719 | 3.72 | 26.8 | 25.0 | 1.050 | 978 | 823 | MISSISSIPPIAN | 1952 | BUFFALO COULEE | BAKKEN SAND |
| 0.206 | 275 | 6.66 | 29.5 | 25.0 | 1.075 | 981 | 814 | MISSISSIPPIAN | 1952 | BUFF. COULEE NORTH | BAKKEN SAND |
| 0.188 | 2000 | 7.75 | 30.0 | 35.0 | 1.039 | 964 | 851 | MISSISSIPPIAN | 1974 | CACTUS LAKE | BASAL MANNVILLE-BAKKEN SAND |
| 0.154 | 2873 | 11.48 | 24.1 | 31.0 | 1.078 | 982 | 823 | MISSISSIPPIAN | 1951 | COLEVILLE | BAKKEN SAND |
| 0.169 | 227 | 3.96 | 25.0 | 25.0 | 1.111 | 976 | 785 | CRETACEOUS | 1952 | | MANNVILLE SAND |
| 0.206 | 502 | 8.41 | 29.5 | 25.0 | 1.075 | 972 | 818 | MISSISSIPPIAN | 1983 | COLEVILLE SOUTH | BAKKEN SANDS |
| 0.169 | 129 | 9.49 | 25.0 | 25.0 | 1.111 | 974 | 757 | CRETACEOUS | 1983 | | MANNVILLE |
| 0.183 | 871 | 4.70 | 29.0 | 30.0 | 1.110 | 965 | 776 | CRETACEOUS | 1972 | COSINE LAKE | LLOYDMINSTER SAND |
| 0.228 | 599 | 8.60 | 32.0 | 25.0 | 1.053 | 953 | 863 | MISSISSIPPIAN | 1982 | COURT | BAKKEN SAND |
| 0.163 | 178 | 6.70 | 25.9 | 30.0 | 1.111 | 969 | 729 | CRETACEOUS | 1969 | DRUID | MANNVILLE SANDS |
| 0.186 | 414 | 4.21 | 25.4 | 22.0 | 1.066 | 962 | 799 | MISSISSIPPIAN | 1955 | FUSILIER | BAKKEN SAND |
| 0.202 | 245 | 5.31 | 28.4 | 25.0 | 1.053 | 953 | 756 | MISSISSIPPIAN | 1983 | HEARTS HILL | BAKKEN SAND |
| 0.233 | 228 | 5.88 | 31.5 | 22.0 | 1.053 | 975 | 865 | MISSISSIPPIAN | 1973 | HOOSIER | BAKKEN SAND (VOLUNTARY UNIT NO. 1) |
| 0.185 | 369 | 7.19 | 25.3 | 22.0 | 1.066 | 976 | – | MISSISSIPPIAN | – | | BAKKEN SAND (NON-UNIT) |
| 0.163 | 146 | 10.50 | 28.9 | 25.0 | 1.333 | 957 | 853 | CRET-JURASSIC | 1952 | LOVERNA | DETRITAL |
| 0.218 | 615 | 11.11 | 30.8 | 25.0 | 1.053 | 983 | 739 | MISSISSIPPIAN | 1979 | LUSELAND | BAKKEN SAND |
| 0.223 | 558 | 6.92 | 30.5 | 22.0 | 1.066 | 956 | 876 | MISSISSIPPIAN | 1965 | NORTH HOOSIER | BAKKEN SAND (VOLUNTARY UNIT) |
| 0.223 | 227 | 6.96 | 30.5 | 22.0 | 1.068 | – | – | MISSISSIPPIAN | – | | BAKKEN SAND (NON-UNIT) |
| 0.195 | 313 | 6.60 | 28.0 | 27.0 | 1.049 | 970 | 838 | CRETACEOUS | 1964 | NORTH HOOSIER | BASAL MANNVILLE SAND (VOL UNIT) |
| 0.223 | 16 | 5.25 | 32.0 | 27.0 | 1.049 | 970 | 838 | CRETACEOUS | 1964 | | BASAL MANNVILLE SAND (NON-UNIT) |
| 0.175 | 129 | 5.28 | 25.1 | 25.0 | 1.075 | 965 | 810 | MISSISSIPPIAN | 1981 | NORTH SMILEY | BAKKEN SAND |
| 0.224 | 583 | 8.60 | 31.5 | 25.0 | 1.053 | 987 | 817 | MISSISSIPPIAN | 1974 | PLOVER LAKE | BAKKEN SAND |
| 0.193 | 926 | 7.14 | 27.5 | 25.0 | 1.066 | – | – | MISSISSIPPIAN | – | MISCELLANEOUS | BAKKEN SAND |
| 0.194 | 146 | 5.46 | 27.3 | 25.0 | 1.053 | – | – | CRETACEOUS | – | | BASAL MANNVILLE SAND |
| 0.056 | 32 | 5.50 | 12.4 | 40.0 | 1.333 | 975 | – | DEVONIAN | – | | BIRDBEAR |
| 0.142 | 340 | 9.10 | 27.1 | 30.0 | 1.335 | – | – | CRET.-JURASSIC | – | | DETRITAL |
| 0.166 | 32 | 5.30 | 25.0 | 30.0 | 1.053 | – | – | CRETACEOUS | – | | LLOYDMINISTER SAND |
| 0.185 | 664 | 8.70 | 26.5 | 25.0 | 1.075 | – | – | CRETACEOUS | – | | MANNVILLE SAND |
| 0.128 | 65 | 3.00 | 28.4 | 40.0 | 1.333 | – | – | CRETACEOUS | – | | MCLAREN SAND |
| 0.247 | 18 | 2.00 | 30.0 | 15.0 | 1.033 | – | – | CRETACEOUS | – | | SPARKY SAND |
| | | | | | | | | | | **AREA II - LIGHT** | |
| 0.115 | 1586 | 2.47 | 23.0 | 45.0 | 1.103 | 844 | 725 | CRETACEOUS | 1959 | AVON HILL | VIKING (VOL UNIT) |
| 0.115 | 2444 | 2.39 | 23.0 | 45.0 | 1.103 | 844 | 725 | CRETACEOUS | 1959 | | VIKING (NON-UNIT) |
| 0.112 | 3772 | 3.02 | 22.4 | 45.0 | 1.103 | 840 | 671 | CRETACEOUS | 1956 | DODSLAND | VIKING SAND (EAGLE LAKE UNIT) |
| 0.112 | 6814 | 3.21 | 22.4 | 45.0 | 1.103 | 840 | 671 | CRETACEOUS | 1956 | | VIKING SAND (EAST DODS. VOL UNIT) |
| 0.108 | 3011 | 2.93 | 21.7 | 45.0 | 1.103 | 840 | 671 | CRETACEOUS | 1956 | | VIKING SAND (GLENEATH UNIT) |
| 0.112 | 129 | 2.75 | 22.4 | 45.0 | 1.103 | 840 | 671 | CRETACEOUS | 1956 | | VIKING SAND (GLENEATH S. VOL UNIT) |
| 0.112 | 842 | 2.47 | 22.4 | 45.0 | 1.103 | 840 | 671 | CRETACEOUS | 1956 | | VIKING SAND (KIYIU LAKE VOL UNIT) |
| 0.112 | 1910 | 3.40 | 22.4 | 45.0 | 1.103 | 840 | 671 | CRETACEOUS | 1956 | | VIKING SAND (NORTH DODS. VOL UNIT) |
| 0.112 | 18502 | 2.44 | 22.4 | 45.0 | 1.103 | 842 | 671 | CRETACEOUS | 1956 | | VIKING SAND (NON-UNIT) |
| 0.120 | 1683 | 3.32 | 23.0 | 42.0 | 1.111 | 853 | 724 | CRETACEOUS | 1954 | EUREKA | VIKING (NORTH EUREKA UNIT) |
| 0.121 | 1522 | 3.89 | 23.0 | 42.0 | 1.100 | 853 | 724 | CRETACEOUS | 1954 | | VIKING (SOUTH EUREKA UNIT) |
| 0.121 | 1360 | 4.15 | 23.0 | 42.0 | 1.100 | 849 | 724 | CRETACEOUS | 1954 | | VIKING (NON-UNIT) |

# OIL RESERVES

| | | INITIAL OIL IN PLACE MILLION CUBIC METRES | ESTIMATED RECOVERY | | | INITIAL RESERVES | | | CUMULATIVE PROD. DEC 31/86 | REMAINING RESERVES | 1986 PROD 1000 $m^3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| POOL | PRODUCING HORIZON | | PRIMARY | ENHANCED | TOTAL | PRIMARY | ENHANCED | TOTAL | | | |
| | | | PER CENT | | | MILLION CUBIC METRES | | | | | |
| FORGAN | VIKING | 1.800 | 3.30 | 0.00 | 3.30 | 0.059 | 0.000 | 0.059 | 0.039 | 0.020 | 10.224 |
| KERROBERT | VIKING | 38.424 | 3.53 | 0.14 | 3.67 | 1.356 | 0.054 | 1.410 | 0.579 | 0.831 | 319.486 |
| LUCKY HILLS | VIKING (VOLUNTARY UNIT) | 1.573 | 4.90 | 0.00 | 4.90 | 0.077 | 0.000 | 0.077 | 0.068 | 0.009 | 2.712 |
| | VIKING (NON-UNIT) | 2.324 | 3.60 | 0.00 | 3.60 | 0.084 | 0.000 | 0.084 | 0.080 | 0.004 | 1.444 |
| PLATO | VIKING (VOL UNIT NO. 1) | 6.542 | 3.30 | 1.20 | 4.50 | 0.216 | 0.079 | 0.295 | 0.272 | 0.023 | 5.068 |
| | VIKING (NON-UNIT) | 1.530 | 1.80 | 0.00 | 1.80 | 0.028 | 0.000 | 0.028 | 0.019 | 0.009 | 2.854 |
| PLATO NORTH | VIKING | 12.146 | 4.90 | 0.00 | 4.90 | 0.595 | 0.000 | 0.595 | 0.227 | 0.368 | 98.201 |
| SMILEY-DEWAR | VIKING | 26.340 | 14.30 | 5.80 | 20.10 | 3.767 | 1.528 | 5.295 | 4.219 | 1.076 | 99.440 |
| WHITESIDE | VIKING SAND (VOL UNIT) | 2.668 | 10.00 | 3.90 | 13.90 | 0.267 | 0.104 | 0.371 | 0.249 | 0.122 | 8.947 |
| | VIKING SAND (NON-UNIT) | 4.981 | 2.70 | 0.00 | 2.70 | 0.134 | 0.000 | 0.134 | 0.094 | 0.040 | 30.581 |
| MISCELLANEOUS | VIKING SAND | 9.278 | 2.50 | 0.00 | 2.50 | 0.232 | 0.000 | 0.232 | 0.083 | 0.149 | 35.756 |
| | VIKING CHERT | 0.156 | 1.20 | 0.00 | 1.20 | 0.002 | 0.000 | 0.002 | 0.002 | 0.000 | 0.000 |
| | **TOTAL AREA II LIGHT** | **246.419** | | | | **17.162** | **10.551** | **27.713** | **15.807** | **11.906** | **1208.013** |
| **AREA III - MEDIUM** | | | | | | | | | | | |
| ANTELOPE LAKE | UPPER SHAUNAVON (VOL UNIT) | 0.992 | 5.00 | 5.50 | 10.50 | 0.050 | 0.055 | 0.105 | 0.070 | 0.035 | 2.963 |
| | UPPER SHAUNAVON (NON-UNIT) | 0.029 | 5.20 | 0.00 | 5.20 | 0.002 | 0.000 | 0.002 | 0.002 | 0.000 | 0.000 |
| ANTELOPE LAKE EAST | ROSERAY SAND | 0.457 | 1.80 | 0.00 | 1.80 | 0.008 | 0.000 | 0.008 | 0.007 | 0.001 | 0.363 |
| BATTLE CREEK | MADISON | 0.428 | 4.05 | 0.00 | 4.05 | 0.017 | 0.000 | 0.017 | 0.017 | 0.000 | 0.000 |
| BATTLE CREEK | UPPER SHAUNAVON | 0.251 | 15.10 | 0.00 | 15.10 | 0.038 | 0.000 | 0.038 | 0.030 | 0.008 | 1.134 |
| BATTRUM NORTH | ROSERAY SAND | 2.743 | 6.40 | 0.00 | 6.40 | 0.176 | 0.000 | 0.176 | 0.078 | 0.098 | 13.144 |
| BATTRUM | ROSERAY SAND (UNIT NO. 1) | 29.044 | 10.00 | 13.40 | 23.40 | 2.904 | 3.892 | 6.796 | 4.767 | 2.029 | 108.943 |
| | ROSERAY SAND (UNIT NO. 2) | 5.990 | 6.60 | 21.30 | 27.90 | 0.395 | 1.276 | 1.671 | 1.233 | 0.438 | 37.876 |
| | ROSERAY SAND (UNIT NO. 3) | 7.254 | 8.00 | 17.00 | 25.00 | 0.580 | 1.233 | 1.813 | 1.267 | 0.546 | 38.701 |
| | ROSERAY SAND (UNIT NO. 4) | 3.431 | 8.30 | 26.70 | 35.00 | 0.285 | 0.916 | 1.201 | 0.924 | 0.277 | 48.702 |
| | ROSERAY SAND (NON-UNIT) | 1.660 | 14.10 | 0.00 | 14.10 | 0.234 | 0.000 | 0.234 | 0.051 | 0.183 | 13.664 |
| BENCH | UPPER SHAUNAVON | 8.742 | 4.40 | 0.00 | 4.40 | 0.385 | 0.000 | 0.385 | 0.249 | 0.136 | 18.625 |
| BEVERLEY | CANTUAR SAND | 11.293 | 4.70 | 0.00 | 4.70 | 0.531 | 0.000 | 0.531 | 0.416 | 0.115 | 21.384 |
| BEVERLEY NORTH | CANTUAR SAND | 8.672 | 3.20 | 0.00 | 3.20 | 0.278 | 0.000 | 0.278 | 0.186 | 0.092 | 14.620 |
| BEVERLEY | UPPER ROSERAY SAND (BEV. UNIT NO. 1) | 4.036 | 15.00 | 27.50 | 42.50 | 0.605 | 1.110 | 1.715 | 1.568 | 0.147 | 19.244 |
| | UPPER ROSERAY SAND (NON-UNIT) | 0.860 | 9.81 | 0.00 | 9.81 | 0.084 | 0.000 | 0.084 | 0.059 | 0.025 | 5.807 |
| BONE CREEK | UPPER SHAUNAVON (UNIT) | 12.699 | 5.00 | 15.10 | 20.10 | 0.635 | 1.918 | 2.553 | 2.306 | 0.247 | 26.530 |
| BUTTE | UPPER SHAUNAVON (VOLUNTARY UNIT) | 8.916 | 5.50 | 14.70 | 20.20 | 0.490 | 1.311 | 1.801 | 0.800 | 1.001 | 63.244 |
| | UPPER SHAUNAVON (NON-UNIT) | 1.656 | 2.90 | 0.00 | 2.90 | 0.048 | 0.000 | 0.048 | 0.019 | 0.029 | 10.581 |
| CANTUAR EAST | CANTUAR SAND (UNIT NO. 1) | 4.814 | 3.10 | 2.60 | 5.70 | 0.149 | 0.125 | 0.274 | 0.175 | 0.099 | 10.568 |
| | CANTUAR SAND (UNIT NO. 2) | 0.813 | 1.70 | 0.00 | 1.70 | 0.014 | 0.000 | 0.014 | 0.012 | 0.002 | 0.635 |
| CANTUAR EAST | ROSERAY SAND (UNIT NO. 1) | 2.899 | 6.80 | 2.30 | 9.10 | 0.197 | 0.067 | 0.264 | 0.207 | 0.057 | 5.518 |
| | ROSERAY SAND (UNIT NO. 2) | 1.989 | 11.40 | 2.00 | 13.40 | 0.227 | 0.040 | 0.267 | 0.226 | 0.041 | 3.697 |
| | ROSERAY SAND (NON-UNIT) | 0.014 | 1.00 | 0.00 | 1.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.002 |
| CANTUAR | LOWER ROSERAY SAND (CANTUAR UNIT) | 13.927 | 13.70 | 0.00 | 13.70 | 1.908 | 0.000 | 1.908 | 1.570 | 0.338 | 38.513 |
| | LOWER ROSERAY SAND (NON-UNIT) | 0.032 | 0.50 | 0.00 | 0.50 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| CANTUAR MAIN | CANTUAR SAND (CANTUAR UNIT) | 22.107 | 8.70 | 11.10 | 19.80 | 1.923 | 2.454 | 4.377 | 3.864 | 0.513 | 88.194 |
| | CANTUAR SAND (NON-UNIT) | 0.111 | 4.50 | 0.00 | 4.50 | 0.005 | 0.000 | 0.005 | 0.002 | 0.003 | 0.366 |
| CLINTONVILLE | SHAUNAVON | 4.563 | 1.80 | 0.00 | 1.80 | 0.082 | 0.000 | 0.082 | 0.058 | 0.024 | 2.969 |
| COVINGTON | UPPER SHAUNAVON (COV. UNIT NO. 1) | 1.071 | 14.00 | 6.40 | 20.40 | 0.150 | 0.069 | 0.219 | 0.213 | 0.006 | 3.225 |
| | UPPER SHAUNAVON (NON-UNIT) | 0.071 | 3.80 | 0.00 | 3.80 | 0.003 | 0.000 | 0.003 | 0.001 | 0.002 | 0.663 |
| COVINGTON WEST | UPPER SHAUNAVON | 0.839 | 11.40 | 0.00 | 11.40 | 0.096 | 0.000 | 0.096 | 0.078 | 0.018 | 1.981 |
| DELTA | UPPER SHAUNAVON (DELTA UNIT NO. 1) | 9.383 | 12.00 | 13.80 | 25.80 | 1.126 | 1.295 | 2.421 | 2.195 | 0.226 | 26.418 |
| | UPPER SHAUNAVON (DELTA UNIT NO. 2) | 2.540 | 7.00 | 10.50 | 17.50 | 0.178 | 0.267 | 0.445 | 0.326 | 0.119 | 6.574 |
| | UPPER SHAUNAVON (VOL UNIT NO. 3) | 0.989 | 9.60 | 0.00 | 9.60 | 0.095 | 0.000 | 0.095 | 0.078 | 0.017 | 2.866 |
| | UPPER SHAUNAVON (NON-UNIT) | 0.940 | 0.84 | 0.00 | 0.84 | 0.008 | 0.000 | 0.008 | 0.008 | 0.000 | 0.000 |

# OIL RESERVOIR DATA

| OIL IN PLACE $m^3/m^3$ | DEVELOPED AREA HECTARES | NET PAY METRES | AVERAGE POROSITY ---PER CENT--- | AVERAGE CONNATE WATER ---PER CENT--- | FORMATION VOLUME FACTOR | OIL DENSITY $KG/M^3$ | PRODUCING DEPTH METRES | SYSTEM | DISCOVERY YEAR | POOL | PRODUCING HORIZON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.114 | 615 | 2.57 | 23.0 | 45.0 | 1.111 | 842 | 714 | CRETACEOUS | 1961 | FORGAN | VIKING |
| 0.115 | 16621 | 1.96 | 23.0 | 45.0 | 1.103 | 842 | 714 | CRETACEOUS | 1961 | KERROBERT | VIKING |
| 0.114 | 453 | 3.05 | 23.0 | 45.0 | 1.111 | 843 | 716 | CRETACEOUS | 1959 | LUCKY HILLS | VIKING (VOLUNTARY UNIT) |
| 0.114 | 745 | 2.74 | 23.0 | 45.0 | 1.111 | 843 | 716 | CRETACEOUS | 1959 | | VIKING (NON-UNIT) |
| 0.128 | 1554 | 3.29 | 22.0 | 38.0 | 1.086 | 853 | 644 | CRETACEOUS | 1968 | PLATO | VIKING (VOL UNIT NO. 1) |
| 0.128 | 421 | 2.84 | 22.0 | 38.0 | 1.086 | 858 | 644 | CRETACEOUS | 1968 | | VIKING (NON-UNIT) |
| 0.135 | 3432 | 2.63 | 23.0 | 35.0 | 1.111 | 865 | 705 | CRETACEOUS | 1978 | PLATO NORTH | VIKING |
| 0.121 | 4821 | 4.42 | 24.0 | 45.0 | 1.090 | 875 | 701 | CRETACEOUS | 1953 | SMILEY-DEWAR | VIKING |
| 0.120 | 1214 | 1.83 | 24.0 | 45.0 | 1.099 | 870 | 751 | CRETACEOUS | 1953 | WHITESIDE | VIKING SAND (VOL UNIT) |
| 0.120 | 2266 | 1.83 | 24.0 | 45.0 | 1.099 | 870 | 751 | CRETACEOUS | 1953 | | VIKING SAND (NON-UNIT) |
| 0.135 | 3092 | 2.23 | 23.0 | 35.0 | 1.111 | – | – | CRETACEOUS | – | MISCELLANEOUS | VIKING SAND |
| 0.140 | 32 | 3.51 | 24.0 | 35.0 | 1.111 | – | – | CRETACEOUS | – | | VIKING CHERT |
| | | | | | | | | | | **AREA III - MEDIUM** | |
| 0.105 | 442 | 2.13 | 18.0 | 40.0 | 1.025 | 914 | 1037 | JURASSIC | 1964 | ANTELOPE LAKE | UPPER SHAUNAVON (VOL UNIT) |
| 0.100 | 16 | 1.83 | 17.0 | 40.0 | 1.025 | – | – | JURASSIC | – | | UPPER SHAUNAVON (NON-UNIT) |
| 0.141 | 65 | 5.00 | 23.9 | 37.0 | 1.070 | 923 | 950 | JURASSIC | 1964 | ANTELOPE LAKE EAST | ROSERAY SAND |
| 0.115 | 49 | 7.62 | 16.0 | 25.0 | 1.047 | 997 | 1390 | MISSISSIPPIAN | 1966 | BATTLE CREEK | MADISON |
| 0.084 | 65 | 4.57 | 12.5 | 25.0 | 1.111 | 945 | 1337 | JURASSIC | 1966 | BATTLE CREEK | UPPER SHAUNAVON |
| 0.140 | 259 | 7.58 | 24.3 | 41.0 | 1.026 | 937 | 886 | JURASSIC | 1979 | BATTRUM NORTH | ROSERAY SAND |
| 0.169 | 1589 | 10.73 | 26.0 | 33.2 | 1.026 | 938 | 884 | JURASSIC | 1955 | BATTRUM | ROSERAY SAND (UNIT NO. 1) |
| 0.190 | 324 | 9.75 | 27.4 | 29.0 | 1.026 | – | – | JURASSIC | – | | ROSERAY SAND (UNIT NO. 2) |
| 0.149 | 842 | 5.79 | 25.1 | 39.3 | 1.024 | – | – | JURASSIC | – | | ROSERAY SAND (UNIT NO. 3) |
| 0.149 | 453 | 5.09 | 25.1 | 39.3 | 1.024 | – | – | JURASSIC | – | | ROSERAY SAND (UNIT NO. 4) |
| 0.148 | 194 | 5.88 | 24.6 | 39.3 | 1.026 | – | – | JURASSIC | – | | ROSERAY SAND (NON-UNIT) |
| 0.109 | 1862 | 4.29 | 13.7 | 15.0 | 1.064 | 915 | 1347 | JURASSIC | 1969 | BENCH | UPPER SHAUNAVON |
| 0.117 | 1214 | 7.97 | 23.3 | 46.1 | 1.076 | 920 | 991 | CRETACEOUS | 1969 | BEVERLEY | CANTUAR SAND |
| 0.114 | 971 | 7.80 | 22.4 | 45.0 | 1.076 | 932 | 969 | CRETACEOUS | 1967 | BEVERLEY NORTH | CANTUAR SAND |
| 0.161 | 805 | 3.11 | 28.0 | 38.8 | 1.063 | 926 | 983 | JURASSIC | 1952 | BEVERLEY | UPPER ROSERAY SAND (BEV. UNIT NO. 1) |
| 0.140 | 113 | 5.42 | 24.4 | 38.8 | 1.063 | 929 | – | JURASSIC | – | | UPPER ROSERAY SAND (NON-UNIT) |
| 0.123 | 2226 | 4.63 | 13.8 | 5.0 | 1.064 | 914 | 1341 | JURASSIC | 1954 | BONE CREEK | UPPER SHAUNAVON (UNIT) |
| 0.164 | 2137 | 2.54 | 22.8 | 25.0 | 1.041 | 914 | 1336 | JURASSIC | 1967 | BUTTE | UPPER SHAUNAVON (VOLUNTARY UNIT) |
| 0.130 | 259 | 4.93 | 18.0 | 25.0 | 1.041 | – | – | JURASSIC | – | | UPPER SHAUNAVON (NON-UNIT) |
| 0.122 | 763 | 5.18 | 23.3 | 43.6 | 1.079 | 920 | 965 | CRETACEOUS | 1956 | CANTUAR EAST | CANTUAR SAND (UNIT NO. 1) |
| 0.122 | 146 | 4.57 | 23.3 | 43.6 | 1.079 | 929 | – | CRETACEOUS | – | | CANTUAR SAND (UNIT NO. 2) |
| 0.145 | 716 | 2.80 | 26.0 | 40.0 | 1.079 | 933 | 963 | JURASSIC | 1952 | CANTUAR EAST | ROSERAY SAND (UNIT NO. 1) |
| 0.145 | 502 | 2.74 | 26.0 | 40.0 | 1.079 | 938 | – | JURASSIC | – | | ROSERAY SAND (UNIT NO. 2) |
| 0.145 | 6 | 1.22 | 26.0 | 40.0 | 1.079 | – | – | JURASSIC | – | | ROSERAY SAND (NON-UNIT) |
| 0.190 | 2765 | 2.65 | 27.2 | 24.6 | 1.079 | 964 | 991 | JURASSIC | 1952 | CANTUAR | LOWER ROSERAY SAND (CANTUAR UNIT) |
| 0.190 | 8 | 2.13 | 27.2 | 24.6 | 1.079 | – | – | JURASSIC | – | | LOWER ROSERAY SAND (NON-UNIT) |
| 0.136 | 3166 | 5.06 | 26.4 | 43.6 | 1.079 | 922 | 975 | CRETACEOUS | 1952 | CANTUAR MAIN | CANTUAR SAND (CANTUAR UNIT) |
| 0.136 | 16 | 5.05 | 26.4 | 43.6 | 1.079 | 918 | – | CRETACEOUS | – | | CANTUAR SAND (NON-UNIT) |
| 0.103 | 518 | 8.56 | 14.6 | 25.0 | 1.064 | 915 | 1362 | JURASSIC | 1953 | CLINTONVILLE | SHAUNAVON |
| 0.117 | 376 | 2.44 | 15.5 | 22.0 | 1.036 | 894 | 1330 | JURASSIC | 1966 | COVINGTON | UPPER SHAUNAVON (COV. UNIT NO. 1) |
| 0.158 | 32 | 1.40 | 21.0 | 22.0 | 1.036 | 894 | 1330 | JURASSIC | 1966 | | UPPER SHAUNAVON (NON-UNIT) |
| 0.066 | 259 | 4.88 | 11.8 | 25.0 | 1.333 | 906 | 1336 | JURASSIC | 1969 | COVINGTON WEST | UPPER SHAUNAVON |
| 0.136 | 2159 | 3.20 | 20.4 | 28.5 | 1.074 | 914 | 1085 | JURASSIC | 1956 | DELTA | UPPER SHAUNAVON (DELTA UNIT NO. 1) |
| 0.093 | 716 | 3.81 | 20.0 | 50.0 | 1.074 | – | – | JURASSIC | – | | UPPER SHAUNAVON (DELTA UNIT NO. 2) |
| 0.131 | 129 | 5.86 | 23.9 | 41.2 | 1.074 | 914 | 1085 | JURASSIC | – | | UPPER SHAUNAVON (VOL UNIT NO. 3) |
| 0.061 | 162 | 7.12 | 17.5 | 50.0 | 1.074 | – | – | JURASSIC | – | | UPPER SHAUNAVON (NON-UNIT) |

# OIL RESERVES

| POOL | PRODUCING HORIZON | INITIAL OIL IN PLACE MILLION CUBIC METRES | ESTIMATED RECOVERY PRIMARY | ESTIMATED RECOVERY ENHANCED | ESTIMATED RECOVERY TOTAL | INITIAL RESERVES PRIMARY | INITIAL RESERVES ENHANCED | INITIAL RESERVES TOTAL | CUMULATIVE PROD. DEC 31/86 | REMAINING RESERVES | 1986 PROD 1000 $m^3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ——PER CENT—— | | | ——MILLION CUBIC METRES—— | | | | | |
| DOLLARD | UPPER SHAUNAVON (UNIT) | 26.064 | 20.00 | 30.70 | 50.70 | 5.213 | 8.002 | 13.215 | 12.666 | 0.549 | 121.639 |
| | UPPER SHAUNAVON (E. DOLL. VOL UNIT) | 1.648 | 20.00 | 23.40 | 43.40 | 0.330 | 0.386 | 0.716 | 0.584 | 0.132 | 19.744 |
| | UPPER SHAUNAVON (NON-UNIT) | 0.496 | 19.90 | 0.00 | 19.90 | 0.099 | 0.000 | 0.099 | 0.092 | 0.007 | 1.585 |
| EASTBROOK | UPPER SHAUNAVON | 2.626 | 4.80 | 0.00 | 4.80 | 0.126 | 0.000 | 0.126 | 0.046 | 0.080 | 8.100 |
| EASTEND | SHAUNAVON | 5.950 | 1.40 | 0.00 | 1.40 | 0.083 | 0.000 | 0.083 | 0.070 | 0.013 | 3.523 |
| FOSTERTON | ROSERAY SAND (MAIN UNIT) | 21.994 | 17.00 | 24.70 | 41.70 | 3.739 | 5.433 | 9.172 | 8.615 | 0.557 | 57.368 |
| | ROSERAY SAND (N.W. UNIT) | 1.978 | 11.00 | 18.10 | 29.10 | 0.218 | 0.358 | 0.576 | 0.547 | 0.029 | 6.211 |
| | ROSERAY SAND (W. FOST. VOL UNIT) | 1.220 | 11.00 | 28.50 | 39.50 | 0.134 | 0.348 | 0.482 | 0.449 | 0.033 | 6.323 |
| FOSTERTON SOUTH | CANTUAR SAND | 0.787 | 6.70 | 0.00 | 6.70 | 0.053 | 0.000 | 0.053 | 0.036 | 0.017 | 2.584 |
| FOSTERTON SOUTH | ROSERAY SAND | 0.681 | 12.00 | 0.00 | 12.00 | 0.082 | 0.000 | 0.082 | 0.020 | 0.062 | 6.396 |
| GULL LAKE | BASAL CANTUAR SAND (VOL UNIT NO. 1) | 1.906 | 4.80 | 19.40 | 24.20 | 0.091 | 0.370 | 0.461 | 0.277 | 0.184 | 19.456 |
| | BASAL CANTUAR SAND (JOHNSTON UNIT) | 1.030 | 6.50 | 8.60 | 15.10 | 0.067 | 0.089 | 0.156 | 0.134 | 0.022 | 1.612 |
| | BASAL CANTUAR SAND (NON-UNIT) | 1.157 | 3.00 | 0.00 | 3.00 | 0.035 | 0.000 | 0.035 | 0.030 | 0.005 | 0.000 |
| GULL LAKE CENTRAL | UPPER SHAUNAVON (VOL UNIT NO. 1) | 0.614 | 24.00 | 19.30 | 43.30 | 0.147 | 0.119 | 0.266 | 0.203 | 0.063 | 5.179 |
| | UPPER SHAUNAVON (NON-UNIT) | 2.879 | 5.60 | 0.00 | 5.60 | 0.161 | 0.000 | 0.161 | 0.127 | 0.034 | 9.146 |
| GULL LAKE NORTH | UPPER SHAUNAVON (UNIT) | 6.822 | 10.00 | 36.70 | 46.70 | 0.682 | 2.504 | 3.186 | 3.013 | 0.173 | 29.965 |
| | UPPER SHAUNAVON (NON-UNIT) | 0.168 | 22.00 | 0.00 | 22.00 | 0.037 | 0.000 | 0.037 | 0.033 | 0.004 | 1.216 |
| GULL LAKE SOUTH | UPPER SHAUNAVON (VOL UNIT NO. 1) | 1.458 | 12.40 | 0.00 | 12.40 | 0.181 | 0.000 | 0.181 | 0.126 | 0.055 | 3.397 |
| | UPPER SHAUNAVON (NON-UNIT) | 0.063 | 4.60 | 0.00 | 4.60 | 0.003 | 0.000 | 0.003 | 0.001 | 0.002 | 0.397 |
| HAZLET | ROSERAY SAND (UNIT) | 1.742 | 26.10 | 0.00 | 26.10 | 0.455 | 0.000 | 0.455 | 0.398 | 0.057 | 5.537 |
| | ROSERAY SAND (NON-UNIT) | 0.253 | 0.24 | 0.00 | 0.24 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.129 |
| ILLERBRUN | UPPER SHAUNAVON (VOLUNTARY UNIT) | 3.221 | 16.60 | 16.40 | 33.00 | 0.535 | 0.528 | 1.063 | 0.937 | 0.126 | 18.457 |
| | UPPER SHAUNAVON (NON-UNIT) | 1.065 | 2.60 | 0.00 | 2.60 | 0.028 | 0.000 | 0.028 | 0.012 | 0.016 | 3.532 |
| INSTOW | UPPER SHAUNAVON (SOUTH VOL UNIT) | 1.399 | 17.00 | 7.90 | 24.90 | 0.238 | 0.111 | 0.349 | 0.089 | 0.260 | 28.581 |
| | UPPER SHAUNAVON (UNIT) | 22.063 | 9.00 | 31.40 | 40.40 | 1.986 | 6.928 | 8.914 | 7.442 | 1.472 | 133.121 |
| | UPPER SHAUNAVON (NON-UNIT) | 0.027 | 7.40 | 0.00 | 7.40 | 0.002 | 0.000 | 0.002 | 0.002 | 0.000 | 0.200 |
| JAVA | CANTUAR SAND | 0.975 | 1.80 | 4.70 | 6.50 | 0.018 | 0.046 | 0.064 | 0.038 | 0.026 | 3.595 |
| JOHNSTON | UPPER SHAUNAVON (JOHNSTON UNIT) | 0.201 | 18.10 | 0.00 | 18.10 | 0.036 | 0.000 | 0.036 | 0.035 | 0.001 | 0.293 |
| LEITCHVILLE | SHAUNAVON (VOLUNTARY UNIT) | 4.936 | 2.50 | 2.60 | 5.10 | 0.123 | 0.128 | 0.251 | 0.213 | 0.038 | 3.306 |
| | SHAUNAVON (NON-UNIT) | 2.724 | 6.80 | 0.00 | 6.80 | 0.185 | 0.000 | 0.185 | 0.098 | 0.087 | 18.619 |
| LEON LAKE | SHAUNAVON | 6.972 | 5.00 | 0.00 | 5.00 | 0.349 | 0.000 | 0.349 | 0.271 | 0.078 | 11.495 |
| MAIN SUCCESS | ROSERAY SAND (MAIN UNIT) | 6.856 | 13.00 | 25.80 | 38.80 | 0.892 | 1.769 | 2.661 | 2.573 | 0.088 | 16.335 |
| NORTH PREMIER | ROSERAY SAND (UNIT NO. 1) | 4.017 | 15.00 | 28.10 | 43.10 | 0.603 | 1.129 | 1.732 | 1.651 | 0.081 | 12.845 |
| | ROSERAY SAND (UNIT NO. 4) | 4.631 | 15.00 | 32.60 | 47.60 | 0.695 | 1.510 | 2.205 | 2.120 | 0.085 | 16.621 |
| | ROSERAY SAND (NON-UNIT) | 0.527 | 10.90 | 0.00 | 10.90 | 0.057 | 0.000 | 0.057 | 0.030 | 0.027 | 4.968 |
| NORTH PREMIER | UPPER SHAUNAVON (UNIT NO. 1) | 0.243 | 10.20 | 0.00 | 10.20 | 0.025 | 0.000 | 0.025 | 0.019 | 0.006 | 1.306 |
| | UPPER SHAUNAVON (VOLUNTARY UNIT) | 0.942 | 6.00 | 7.90 | 13.90 | 0.057 | 0.074 | 0.131 | 0.114 | 0.017 | 3.304 |
| | UPPER SHAUNAVON (UNIT NO. 4) | 2.569 | 10.00 | 2.60 | 12.60 | 0.257 | 0.067 | 0.324 | 0.282 | 0.042 | 8.849 |
| | UPPER SHAUNAVON (NON-UNIT) | 0.652 | 10.90 | 0.00 | 10.90 | 0.071 | 0.000 | 0.071 | 0.050 | 0.021 | 3.655 |
| PENNANT | UPPER SHAUNAVON | 1.234 | 8.00 | 0.00 | 8.00 | 0.099 | 0.000 | 0.099 | 0.078 | 0.021 | 3.941 |
| RAPDAN | UPPER SHAUNAVON (UNIT) | 16.558 | 6.10 | 16.27 | 22.37 | 1.010 | 2.694 | 3.704 | 2.566 | 1.138 | 87.609 |
| | UPPER SHAUNAVON (N.RAPDAN VOL UNIT) | 3.974 | 3.00 | 1.80 | 4.80 | 0.119 | 0.072 | 0.191 | 0.166 | 0.025 | 5.103 |
| | UPPER SHAUNAVON (VOL UNIT NO. 2) | 1.111 | 6.60 | 6.80 | 13.40 | 0.073 | 0.076 | 0.149 | 0.128 | 0.021 | 3.861 |
| | UPPER SHAUNAVON (NON-UNIT) | 1.101 | 1.20 | 0.00 | 1.20 | 0.013 | 0.000 | 0.013 | 0.008 | 0.005 | 1.252 |
| RAPDAN WEST | SHAUNAVON | 3.900 | 5.50 | 0.00 | 5.50 | 0.215 | 0.000 | 0.215 | 0.144 | 0.071 | 10.085 |
| SOUTH SUCCESS | ROSERAY SAND (SOUTHWEST UNIT) | 2.309 | 11.80 | 0.00 | 11.80 | 0.272 | 0.000 | 0.272 | 0.115 | 0.157 | 21.079 |
| | ROSERAY SAND (SUCCESS UNIT) | 8.563 | 13.20 | 34.80 | 48.00 | 1.130 | 2.980 | 4.110 | 3.405 | 0.705 | 64.035 |
| SUCCESS ALPHA | ROSERAY SAND (ALPHA UNIT) | 1.440 | 14.30 | 29.50 | 43.80 | 0.206 | 0.425 | 0.631 | 0.568 | 0.063 | 8.702 |
| SUCCESS NORTH | ROSERAY SAND (VOLUNTARY UNIT) | 2.096 | 14.00 | 16.60 | 30.60 | 0.294 | 0.348 | 0.642 | 0.140 | 0.502 | 42.701 |
| SUFFIELD | ROSERAY SAND (UNIT NO.1) | 1.878 | 15.00 | 49.90 | 64.90 | 0.282 | 0.937 | 1.219 | 1.095 | 0.124 | 24.096 |
| | ROSERAY SAND (UNIT NO. 3) | 2.780 | 13.00 | 35.80 | 48.80 | 0.361 | 0.995 | 1.356 | 1.156 | 0.200 | 36.661 |
| | ROSERAY SAND (NON-UNIT) | 0.107 | 1.00 | 0.00 | 1.00 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |

# OIL RESERVOIR DATA

| OIL IN PLACE $m^3/m^3$ | DEVELOPED AREA HECTARES | NET PAY METRES | AVERAGE POROSITY ----PER CENT---- | AVERAGE CONNATE WATER ----PER CENT---- | FORMATION VOLUME FACTOR | OIL DENSITY $KG/M^3$ | PRODUCING DEPTH METRES | SYSTEM | DISCOVERY YEAR | POOL | PRODUCING HORIZON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.162 | 3642 | 4.42 | 20.0 | 12.0 | 1.087 | 914 | 1402 | JURASSIC | 1953 | DOLLARD | UPPER SHAUNAVON (UNIT) |
| 0.110 | 469 | 3.20 | 17.2 | 30.8 | 1.087 | – | – | JURASSIC | – | | UPPER SHAUNAVON (E. DOLL. VOL UNIT) |
| 0.127 | 129 | 3.04 | 15.7 | 12.0 | 1.087 | – | – | JURASSIC | – | | UPPER SHAUNAVON (NON-UNIT) |
| 0.101 | 421 | 6.17 | 14.5 | 25.0 | 1.075 | 926 | 1420 | JURASSIC | 1966 | EASTBROOK | UPPER SHAUNAVON |
| 0.089 | 971 | 8.90 | 12.2 | 20.0 | 1.099 | 927 | 1457 | JURASSIC | 1952 | EASTEND | SHAUNAVON |
| 0.222 | 1012 | 9.81 | 28.8 | 19.0 | 1.053 | 907 | 975 | CRET.-JUR. | 1952 | FOSTERTON | ROSERAY SAND (MAIN UNIT) |
| 0.225 | 104 | 8.44 | 28.8 | 19.0 | 1.035 | 933 | – | CRET.-JUR. | – | | ROSERAY SAND (N.W. UNIT) |
| 0.166 | 146 | 5.03 | 25.0 | 30.0 | 1.053 | – | – | CRET.-JUR. | – | | ROSERAY SAND (W. FOST. VOL UNIT) |
| 0.136 | 65 | 8.93 | 22.5 | 35.0 | 1.079 | 947 | 950 | CRETACEOUS | 1965 | FOSTERTON SOUTH | CANTUAR SAND |
| 0.136 | 49 | 10.20 | 20.5 | 30.0 | 1.053 | 933 | 966 | JURASSIC | 1965 | FOSTERTON SOUTH | ROSERAY SAND |
| 0.173 | 377 | 2.93 | 26.5 | 30.0 | 1.075 | 914 | 1100 | CRETACEOUS | 1953 | GULL LAKE | BASAL CANTUAR SAND (VOL UNIT NO. 1) |
| 0.119 | 132 | 6.58 | 21.1 | 39.5 | 1.076 | – | – | CRETACEOUS | – | | BASAL CANTUAR SAND (JOHNSTON UNIT) |
| 0.133 | 129 | 6.73 | 23.7 | 39.5 | 1.076 | 927 | – | CRETACEOUS | – | | BASAL CANTUAR SAND (NON-UNIT) |
| 0.084 | 453 | 1.62 | 16.9 | 46.5 | 1.080 | 914 | 1195 | JURASSIC | 1953 | GULL LAKE CENTRAL | UPPER SHAUNAVON (VOL UNIT NO. 1) |
| 0.081 | 1004 | 3.53 | 16.4 | 46.5 | 1.080 | 907 | – | JURASSIC | – | | UPPER SHAUNAVON (NON-UNIT) |
| 0.141 | 1230 | 3.93 | 19.4 | 25.0 | 1.031 | 964 | 1158 | JURASSIC | 1953 | GULL LAKE NORTH | UPPER SHAUNAVON (UNIT) |
| 0.137 | 65 | 1.88 | 18.9 | 25.0 | 1.031 | 920 | – | JURASSIC | – | | UPPER SHAUNAVON (NON-UNIT) |
| 0.164 | 779 | 1.14 | 24.7 | 30.0 | 1.053 | 891 | 1325 | JURASSIC | 1952 | GULL LAKE SOUTH | UPPER SHAUNAVON (VOL UNIT NO. 1) |
| 0.077 | 65 | 1.25 | 11.8 | 30.0 | 1.053 | 891 | 1325 | JURASSIC | 1952 | | UPPER SHAUNAVON (NON-UNIT) |
| 0.173 | 191 | 5.27 | 23.0 | 21.0 | 1.050 | 920 | 963 | JURASSIC | 1963 | HAZLET | ROSERAY SAND (UNIT) |
| 0.173 | 32 | 4.57 | 23.0 | 21.0 | 1.050 | – | – | JURASSIC | – | | ROSERAY SAND (NON-UNIT) |
| 0.117 | 453 | 6.06 | 15.9 | 22.0 | 1.057 | 885 | 1280 | JURASSIC | 1965 | ILLERBRUN | UPPER SHAUNAVON (VOLUNTARY UNIT) |
| 0.114 | 259 | 3.62 | 15.4 | 22.0 | 1.057 | – | – | JURASSIC | – | | UPPER SHAUNAVON (NON-UNIT) |
| 0.089 | 441 | 3.56 | 16.6 | 42.9 | 1.064 | 914 | 1372 | JURASSIC | 1954 | INSTOW | UPPER SHAUNAVON (SOUTH VOL UNIT) |
| 0.111 | 4244 | 4.66 | 13.8 | 15.0 | 1.056 | 914 | – | JURASSIC | – | | UPPER SHAUNAVON (UNIT) |
| 0.069 | 16 | 2.44 | 8.8 | 15.0 | 1.056 | 922 | – | JURASSIC | – | | UPPER SHAUNAVON (NON-UNIT) |
| 0.134 | 347 | 2.09 | 24.0 | 40.0 | 1.071 | 947 | 1013 | CRETACEOUS | 1955 | JAVA | CANTUAR SAND |
| 0.135 | 61 | 2.44 | 16.4 | 15.0 | 1.031 | 914 | 1188 | JURASSIC | 1953 | JOHNSTON | UPPER SHAUNAVON (JOHNSTON UNIT) |
| 0.110 | 971 | 4.63 | 15.7 | 25.6 | 1.064 | 914 | 1371 | JURASSIC | 1960 | LEITCHVILLE | SHAUNAVON (VOLUNTARY UNIT) |
| 0.068 | 1344 | 2.30 | 15.0 | 37.5 | 1.064 | 923 | – | JURASSIC | – | | SHAUNAVON (NON-UNIT) |
| 0.111 | 1674 | 3.74 | 16.2 | 25.0 | 1.091 | 922 | 1371 | JURASSIC | 1953 | LEON LAKE | SHAUNAVON |
| 0.197 | 770 | 4.51 | 26.6 | 19.8 | 1.087 | 914 | 975 | JURASSIC | 1952 | MAIN SUCCESS | ROSERAY SAND (MAIN UNIT) |
| 0.237 | 364 | 4.66 | 32.9 | 25.0 | 1.042 | 968 | 1006 | JURASSIC | 1953 | NORTH PREMIER | ROSERAY SAND (UNIT NO. 1) |
| 0.164 | 635 | 4.45 | 26.7 | 35.8 | 1.046 | – | – | JURASSIC | – | | ROSERAY SAND (UNIT NO. 4) |
| 0.181 | 81 | 3.60 | 25.1 | 25.0 | 1.042 | 917 | – | JURASSIC | – | | ROSERAY SAND (NON-UNIT) |
| 0.109 | 49 | 4.57 | 16.1 | 25.0 | 1.111 | 914 | 1067 | JURASSIC | 1953 | NORTH PREMIER | UPPER SHAUNAVON (UNIT NO. 1) |
| 0.096 | 291 | 3.36 | 16.9 | 40.0 | 1.053 | – | – | JURASSIC | – | | UPPER SHAUNAVON (VOLUNTARY UNIT) |
| 0.099 | 809 | 3.20 | 19.0 | 45.0 | 1.053 | – | – | JURASSIC | – | | UPPER SHAUNAVON (UNIT NO. 4) |
| 0.097 | 178 | 3.79 | 16.5 | 45.0 | 1.053 | – | – | JURASSIC | – | | UPPER SHAUNAVON (NON-UNIT) |
| 0.108 | 704 | 1.63 | 15.1 | 25.0 | 1.053 | 928 | 990 | JURASSIC | 1965 | PENNANT | UPPER SHAUNAVON |
| 0.097 | 3400 | 5.00 | 15.0 | 30.0 | 1.078 | 914 | 1402 | JURASSIC | 1953 | RAPDAN | UPPER SHAUNAVON (UNIT) |
| 0.158 | 497 | 5.06 | 17.7 | 5.0 | 1.084 | – | – | JURASSIC | – | | UPPER SHAUNAVON (N.RAPDAN VOL UNIT) |
| 0.104 | 259 | 4.14 | 15.6 | 28.3 | 1.080 | – | – | JURASSIC | – | | UPPER SHAUNAVON (VOL UNIT NO. 2) |
| 0.147 | 356 | 2.10 | 16.5 | 5.0 | 1.084 | 919 | – | JURASSIC | – | | UPPER SHAUNAVON (NON-UNIT) |
| 0.111 | 1295 | 2.72 | 12.4 | 5.0 | 1.084 | 921 | 1407 | JURASSIC | 1955 | RAPDAN WEST | SHAUNAVON |
| 0.156 | 261 | 5.66 | 24.0 | 30.0 | 1.075 | 934 | 975 | JURASSIC | 1953 | SOUTH SUCCESS | ROSERAY SAND (SOUTHWEST UNIT) |
| 0.193 | 732 | 6.07 | 27.4 | 23.4 | 1.089 | 914 | – | JURASSIC | – | | ROSERAY SAND (SUCCESS UNIT) |
| 0.178 | 176 | 4.60 | 24.8 | 22.9 | 1.075 | 920 | 975 | JURASSIC | 1953 | SUCCESS ALPHA | ROSERAY SAND (ALPHA UNIT) |
| 0.148 | 259 | 5.46 | 22.7 | 30.0 | 1.075 | 929 | 966 | JURASSIC | 1966 | SUCCESS NORTH | ROSERAY SAND (VOLUNTARY UNIT) |
| 0.171 | 341 | 3.23 | 26.0 | 29.3 | 1.078 | 919 | 1036 | JURASSIC | 1954 | SUFFIELD | ROSERAY SAND (UNIT NO.1) |
| 0.157 | 593 | 2.99 | 26.0 | 35.0 | 1.078 | – | – | JURASSIC | – | | ROSERAY SAND (UNIT NO. 3) |
| 0.157 | 32 | 2.13 | 26.0 | 35.0 | 1.078 | – | – | JURASSIC | – | | ROSERAY SAND (NON-UNIT) |

# OIL RESERVES

| POOL | PRODUCING HORIZON | INITIAL OIL IN PLACE MILLION CUBIC METRES | ESTIMATED RECOVERY PRIMARY (PER CENT) | ESTIMATED RECOVERY ENHANCED (PER CENT) | ESTIMATED RECOVERY TOTAL (PER CENT) | INITIAL RESERVES PRIMARY (MILLION CUBIC METRES) | INITIAL RESERVES ENHANCED (MILLION CUBIC METRES) | INITIAL RESERVES TOTAL (MILLION CUBIC METRES) | CUMULATIVE PROD. DEC 31/86 (MILLION CUBIC METRES) | REMAINING RESERVES (MILLION CUBIC METRES) | 1986 PROD 1000 $m^3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SUFFIELD | UPPER SHAUNAVON (UNIT NO. 2) | 3.222 | 7.00 | 17.30 | 24.30 | 0.226 | 0.557 | 0.783 | 0.622 | 0.161 | 17.883 |
| | UPPER SHAUNAVON (UNIT NO. 3) | 0.820 | 10.00 | 18.70 | 28.70 | 0.082 | 0.153 | 0.235 | 0.200 | 0.035 | 4.964 |
| | UPPER SHAUNAVON (NON-UNIT) | 0.739 | 5.80 | 0.00 | 5.80 | 0.043 | 0.000 | 0.043 | 0.043 | 0.000 | 0.292 |
| VERLO | ROSERAY SAND (VERLO ROSERAY SD UNIT) | 8.349 | 3.50 | 22.90 | 26.40 | 0.292 | 1.912 | 2.204 | 1.568 | 0.636 | 90.862 |
| WHITEMUD | UPPER SHAUNAVON | 5.378 | 1.25 | 0.00 | 1.25 | 0.067 | 0.000 | 0.067 | 0.049 | 0.018 | 2.844 |
| MISCELLANEOUS | BASAL MANNVILLE SAND | 0.334 | 3.00 | 0.00 | 3.00 | 0.010 | 0.000 | 0.010 | 0.009 | 0.001 | 0.000 |
| | CANTUAR SAND | 8.716 | 5.00 | 0.00 | 5.00 | 0.436 | 0.000 | 0.436 | 0.253 | 0.183 | 30.257 |
| | GRAVELBOURG | 0.124 | 16.00 | 0.00 | 16.00 | 0.020 | 0.000 | 0.020 | 0.014 | 0.006 | 0.875 |
| | PREMIER SAND (N. PREMIER UNIT NO. 2) | 0.232 | 15.00 | 12.80 | 27.80 | 0.035 | 0.029 | 0.064 | 0.060 | 0.004 | 0.826 |
| | ROSERAY SAND | 11.198 | 4.12 | 0.00 | 4.12 | 0.461 | 0.000 | 0.461 | 0.336 | 0.125 | 19.704 |
| | LOWER ROSERAY | 0.130 | 2.00 | 0.00 | 2.00 | 0.003 | 0.000 | 0.003 | 0.001 | 0.002 | 0.000 |
| | UPPER ROSERAY | 0.289 | 3.51 | 0.00 | 3.51 | 0.010 | 0.000 | 0.010 | 0.007 | 0.003 | 0.933 |
| | SHAUNAVON | 0.130 | 0.50 | 0.00 | 0.50 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| | LOWER SHAUNAVON | 2.442 | 2.38 | 0.00 | 2.38 | 0.058 | 0.000 | 0.058 | 0.052 | 0.006 | 1.877 |
| | UPPER SHAUNAVON | 16.844 | 3.16 | 0.00 | 3.16 | 0.532 | 0.000 | 0.532 | 0.364 | 0.168 | 41.346 |
| | **TOTAL AREA III MEDIUM** | **427.817** | | | | **38.349** | **57.105** | **95.454** | **79.650** | **15.804** | **1756.725** |
| **AREA IV - MEDIUM** | | | | | | | | | | | |
| BENSON | MIDALE (NORTHWEST VOL UNIT) | 0.513 | 6.00 | 3.30 | 9.30 | 0.031 | 0.017 | 0.048 | 0.031 | 0.017 | 1.785 |
| | MIDALE (UNIT) | 8.079 | 6.00 | 21.10 | 27.10 | 0.485 | 1.705 | 2.190 | 1.514 | 0.676 | 40.667 |
| | MIDALE (VOLUNTARY UNIT NO. 1) | 2.265 | 5.00 | 14.20 | 19.20 | 0.113 | 0.322 | 0.435 | 0.368 | 0.067 | 8.276 |
| | MIDALE (NON-UNIT) | 7.689 | 6.90 | 0.00 | 6.90 | 0.531 | 0.000 | 0.531 | 0.224 | 0.307 | 25.716 |
| BROMHEAD | MIDALE | 2.082 | 14.80 | 0.00 | 14.80 | 0.308 | 0.000 | 0.308 | 0.255 | 0.053 | 4.664 |
| BRYANT | FROBISHER | 0.341 | 10.00 | 0.00 | 10.00 | 0.034 | 0.000 | 0.034 | 0.015 | 0.019 | 2.583 |
| BRYANT | MIDALE | 2.408 | 3.20 | 0.00 | 3.20 | 0.077 | 0.000 | 0.077 | 0.046 | 0.031 | 6.227 |
| FLAT LAKE | RATCLIFFE (NON-UNIT) | 0.192 | 7.30 | 0.00 | 7.30 | 0.014 | 0.000 | 0.014 | 0.005 | 0.009 | 0.804 |
| FREESTONE | FROBISHER-ALIDA | 2.538 | 19.90 | 0.00 | 19.90 | 0.505 | 0.000 | 0.505 | 0.326 | 0.179 | 19.047 |
| GRIFFIN | FROBISHER | 0.636 | 20.00 | 0.00 | 20.00 | 0.127 | 0.000 | 0.127 | 0.127 | 0.000 | 1.031 |
| HANDSWORTH | ALIDA | 2.955 | 14.60 | 0.00 | 14.60 | 0.431 | 0.000 | 0.431 | 0.395 | 0.036 | 7.570 |
| HARTAVEN | FROBISHER-ALIDA | 0.553 | 32.90 | 0.00 | 32.90 | 0.182 | 0.000 | 0.182 | 0.087 | 0.095 | 6.666 |
| HOFFER | RATCLIFFE LOWER POOL | 1.275 | 16.80 | 0.00 | 16.80 | 0.214 | 0.000 | 0.214 | 0.212 | 0.002 | 0.526 |
| HOFFER | RATCLIFFE UPPER POOL | 0.318 | 14.20 | 0.00 | 14.20 | 0.045 | 0.000 | 0.045 | 0.039 | 0.006 | 0.977 |
| HUME | FROBISHER | 0.954 | 23.70 | 0.00 | 23.70 | 0.226 | 0.000 | 0.226 | 0.189 | 0.037 | 6.121 |
| HUME | MIDALE | 1.216 | 14.40 | 0.00 | 14.40 | 0.175 | 0.000 | 0.175 | 0.144 | 0.031 | 5.602 |
| HUMMINGBIRD | RATCLIFFE (VOLUNTARY UNIT NO. 1) | 4.114 | 10.00 | 6.30 | 16.30 | 0.411 | 0.259 | 0.670 | 0.522 | 0.148 | 23.537 |
| HUNTOON | FROBISHER | 10.701 | 5.10 | 0.00 | 5.10 | 0.546 | 0.000 | 0.546 | 0.510 | 0.036 | 10.057 |
| HUNTOON | MIDALE (VOL. UNIT NO. 1) | 4.443 | 5.00 | 3.00 | 8.00 | 0.222 | 0.133 | 0.355 | 0.297 | 0.058 | 5.978 |
| | MIDALE (NON-UNIT) | 3.050 | 3.40 | 0.00 | 3.40 | 0.104 | 0.000 | 0.104 | 0.074 | 0.030 | 12.943 |
| INGOLDSBY | FROBISHER-ALIDA (NON-UNIT) | 7.669 | 24.40 | 0.00 | 24.40 | 1.871 | 0.000 | 1.871 | 1.562 | 0.309 | 24.165 |
| INNES | FROBISHER | 9.260 | 23.30 | 0.00 | 23.30 | 2.158 | 0.000 | 2.158 | 1.811 | 0.347 | 40.326 |
| LAKE ALMA | RATCLIFFE (VOLUNTARY UNIT) | 2.379 | 17.00 | 35.70 | 52.70 | 0.404 | 0.849 | 1.253 | 0.653 | 0.600 | 24.119 |
| LOST HORSE HILL | FROBISHER-ALIDA (VOL UNIT NO. 1) | 9.649 | 21.80 | 0.00 | 21.80 | 2.103 | 0.000 | 2.103 | 1.936 | 0.167 | 26.929 |
| | FROBISHER-ALIDA (NON-UNIT) | 4.956 | 23.50 | 0.00 | 23.50 | 1.165 | 0.000 | 1.165 | 0.834 | 0.331 | 29.399 |
| LOUGHEED | MIDALE | 9.270 | 11.30 | 0.00 | 11.30 | 1.048 | 0.000 | 1.048 | 0.526 | 0.522 | 27.864 |
| MACOUN | MIDALE | 1.978 | 17.20 | 0.00 | 17.20 | 0.340 | 0.000 | 0.340 | 0.278 | 0.062 | 10.621 |
| MACOUN WEST | MIDALE | 0.793 | 9.50 | 0.00 | 9.50 | 0.075 | 0.000 | 0.075 | 0.047 | 0.028 | 4.496 |
| MELROSE | FROBISHER-ALIDA | 0.758 | 17.80 | 0.00 | 17.80 | 0.135 | 0.000 | 0.135 | 0.120 | 0.015 | 2.452 |
| MIDALE | CENTRAL-FROBISHER | 4.209 | 24.50 | 0.00 | 24.50 | 1.031 | 0.000 | 1.031 | 0.898 | 0.133 | 8.732 |
| MIDALE | CENTRAL MIDALE (UNIT) | 56.802 | 16.90 | 16.70 | 33.60 | 9.600 | 9.486 | 19.086 | 15.187 | 3.899 | 287.111 |
| | CENTRAL MIDALE (NON-UNIT) | 17.880 | 8.90 | 0.00 | 8.90 | 1.801 | 0.000 | 1.801 | 1.215 | 0.586 | 51.132 |
| MINARD | MIDALE | 0.451 | 3.80 | 0.00 | 3.80 | 0.017 | 0.000 | 0.017 | 0.007 | 0.010 | 1.105 |
| MOOSE VALLEY | TILSTON | 0.924 | 10.80 | 0.00 | 10.80 | 0.100 | 0.000 | 0.100 | 0.070 | 0.030 | 4.082 |

# OIL RESERVOIR DATA

| OIL IN PLACE $m^3/m^3$ | DEVELOPED AREA HECTARES | NET PAY METRES | AVERAGE POROSITY —PER CENT— | AVERAGE CONNATE WATER | FORMATION VOLUME FACTOR | OIL DENSITY $KG/M^3$ | PRODUCING DEPTH METRES | SYSTEM | DISCOVERY YEAR | POOL | PRODUCING HORIZON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.128 | 699 | 3.60 | 17.6 | 25.0 | 1.031 | 914 | 1097 | JURASSIC | 1954 | SUFFIELD | UPPER SHAUNAVON (UNIT NO. 2) |
| 0.152 | 269 | 2.01 | 21.2 | 25.0 | 1.048 | – | – | JURASSIC | – | | UPPER SHAUNAVON (UNIT NO. 3) |
| 0.143 | 194 | 2.67 | 19.6 | 25.0 | 1.031 | 937 | – | JURASSIC | – | | UPPER SHAUNAVON (NON-UNIT) |
| 0.181 | 896 | 5.15 | 27.5 | 29.1 | 1.060 | 920 | 983 | JURASSIC | 1956 | VERLO | ROSERAY SAND (VERLO ROSERAY SD UNIT) |
| 0.131 | 1003 | 4.06 | 17.8 | 20.0 | 1.063 | 924 | 1432 | JURASSIC | 1953 | WHITEMUD | UPPER SHAUNAVON |
| 0.113 | 65 | 4.57 | 20.0 | 25.0 | 1.333 | – | – | CRETACEOUS | – | MISCELLANEOUS | BASAL MANNVILLE SAND |
| 0.141 | 2169 | 2.64 | 23.4 | 35.0 | 1.075 | – | – | CRETACEOUS | – | | CANTUAR SAND |
| 0.083 | 65 | 2.29 | 14.8 | 25.0 | 1.333 | – | – | JURASSIC | – | | GRAVELBOURG |
| 0.221 | 75 | 1.40 | 30.8 | 25.0 | 1.046 | – | – | CRETACEOUS | – | | PREMIER SAND (N. PREMIER UNIT NO. 2) |
| 0.178 | 1327 | 4.79 | 24.1 | 25.0 | 1.026 | – | – | JURASSIC | – | | ROSERAY SAND |
| 0.190 | 32 | 2.13 | 27.2 | 24.8 | 1.079 | – | – | JURASSIC | – | | LOWER ROSERAY |
| 0.181 | 32 | 4.98 | 26.0 | 25.0 | 1.075 | – | – | JURASSIC | – | | UPPER ROSERAY |
| 0.074 | 32 | 5.49 | 10.4 | 25.0 | 1.053 | – | – | JURASSIC | – | | SHAUNAVON |
| 0.108 | 647 | 3.51 | 15.1 | 25.0 | 1.053 | – | – | JURASSIC | – | | LOWER SHAUNAVON |
| 0.112 | 5115 | 2.95 | 16.0 | 25.0 | 1.075 | – | – | JURASSIC | – | | UPPER SHAUNAVON |
| | | | | | | | | | | **AREA IV - MEDIUM** | |
| 0.093 | 243 | 2.26 | 15.0 | 30.0 | 1.124 | 875 | 1371 | MISSISSIPPIAN | 1956 | BENSON | MIDALE (NORTHWEST VOL UNIT) |
| 0.151 | 2978 | 1.80 | 24.2 | 30.0 | 1.124 | 875 | 1371 | MISSISSIPPIAN | 1956 | | MIDALE (UNIT) |
| 0.151 | 1117 | 1.34 | 24.3 | 30.0 | 1.124 | 875 | 1371 | MISSISSIPPIAN | 1956 | | MIDALE (VOLUNTARY UNIT NO. 1) |
| 0.070 | 1696 | 6.50 | 11.2 | 30.0 | 1.124 | 886 | – | MISSISSIPPIAN | – | | MIDALE (NON-UNIT) |
| 0.080 | 518 | 5.00 | 13.9 | 35.0 | 1.124 | 903 | 1693 | MISSISSIPPIAN | 1965 | BROMHEAD | MIDALE |
| 0.041 | 194 | 4.30 | 9.1 | 50.0 | 1.112 | 895 | 1433 | MISSISSIPPIAN | 1979 | BRYANT | FROBISHER |
| 0.129 | 1036 | 1.80 | 26.9 | 46.0 | 1.125 | 904 | 1406 | MISSISSIPPIAN | 1979 | BRYANT | MIDALE |
| 0.034 | 65 | 8.60 | 8.1 | 49.2 | 1.199 | 867 | 1956 | MISSISSIPPIAN | 1965 | FLAT LAKE | RATCLIFFE (NON-UNIT) |
| 0.088 | 729 | 5.10 | 14.0 | 35.0 | 1.333 | 879 | 1180 | MISSISSIPPIAN | 1953 | FREESTONE | FROBISHER-ALIDA |
| 0.047 | 453 | 2.99 | 8.4 | 35.0 | 1.163 | 885 | 1302 | MISSISSIPPIAN | 1958 | GRIFFIN | FROBISHER |
| 0.046 | 952 | 6.70 | 9.5 | 35.0 | 1.333 | 886 | 1204 | MISSISSIPPIAN | 1964 | HANDSWORTH | ALIDA |
| 0.074 | 226 | 3.30 | 13.9 | 40.0 | 1.124 | 876 | 1199 | MISSISSIPPIAN | 1965 | HARTAVEN | FROBISHER-ALIDA |
| 0.072 | 259 | 6.81 | 13.9 | 35.0 | 1.250 | 869 | 1935 | MISSISSIPPIAN | 1964 | HOFFER | RATCLIFFE LOWER POOL |
| 0.071 | 130 | 3.43 | 13.7 | 35.0 | 1.250 | 875 | 1927 | MISSISSIPPIAN | 1964 | HOFFER | RATCLIFFE UPPER POOL |
| 0.051 | 428 | 4.38 | 8.8 | 35.0 | 1.124 | 883 | 1350 | MISSISSIPPIAN | 1967 | HUME | FROBISHER |
| 0.058 | 718 | 2.90 | 10.1 | 35.0 | 1.124 | 869 | 1332 | MISSISSIPPIAN | 1968 | HUME | MIDALE |
| 0.087 | 442 | 10.70 | 14.0 | 30.6 | 1.117 | 870 | 1890 | MISSISSIPPIAN | 1966 | HUMMINGBIRD | RATCLIFFE (VOLUNTARY UNIT NO. 1) |
| 0.058 | 2056 | 9.00 | 10.0 | 35.0 | 1.124 | 892 | 1372 | MISSISSIPPIAN | 1957 | HUNTOON | FROBISHER |
| 0.104 | 1230 | 3.47 | 18.0 | 35.0 | 1.124 | 874 | 1359 | MISSISSIPPIAN | 1957 | HUNTOON | MIDALE (VOL. UNIT NO. 1) |
| 0.047 | 1252 | 5.20 | 8.1 | 35.0 | 1.124 | 890 | – | MISSISSIPPIAN | – | | MIDALE (NON-UNIT) |
| 0.084 | 1182 | 10.10 | 10.6 | 30.0 | 1.155 | 876 | 1089 | MISSISSIPPIAN | 1955 | INGOLDSBY | FROBISHER-ALIDA (NON-UNIT) |
| 0.050 | 1841 | 10.00 | 9.0 | 35.0 | 1.163 | 891 | 1333 | MISSISSIPPIAN | 1965 | INNES | FROBISHER |
| 0.128 | 437 | 4.24 | 23.5 | 40.0 | 1.096 | 874 | 1981 | MISSISSIPPIAN | 1965 | LAKE ALMA | RATCLIFFE (VOLUNTARY UNIT) |
| 0.079 | 583 | 20.95 | 15.7 | 45.0 | 1.093 | 848 | 1174 | MISSISSIPPIAN | 1963 | LOST HORSE HILL | FROBISHER-ALIDA (VOL UNIT NO. 1) |
| 0.073 | 656 | 10.30 | 13.7 | 40.0 | 1.124 | 897 | – | MISSISSIPPIAN | – | | FROBISHER-ALIDA (NON-UNIT) |
| 0.109 | 937 | 9.10 | 18.8 | 35.0 | 1.124 | 873 | 1407 | MISSISSIPPIAN | 1959 | LOUGHEED | MIDALE |
| 0.061 | 867 | 3.71 | 11.0 | 35.0 | 1.163 | 895 | 1531 | MISSISSIPPIAN | 1969 | MACOUN | MIDALE |
| 0.041 | 259 | 7.44 | 8.7 | 45.0 | 1.163 | 888 | 1559 | MISSISSIPPIAN | 1970 | MACOUN WEST | MIDALE |
| 0.062 | 216 | 5.70 | 12.6 | 45.0 | 1.124 | 878 | 1169 | MISSISSIPPIAN | 1963 | MELROSE | FROBISHER-ALIDA |
| 0.055 | 1202 | 6.40 | 12.3 | 50.0 | 1.124 | 881 | 1411 | MISSISSIPPIAN | 1953 | MIDALE | CENTRAL-FROBISHER |
| 0.088 | 12335 | 5.24 | 16.3 | 39.4 | 1.124 | 877 | 1402 | MISSISSIPPIAN | 1953 | MIDALE | CENTRAL MIDALE (UNIT) |
| 0.101 | 4526 | 3.92 | 17.8 | 38.0 | 1.124 | 883 | – | MISSISSIPPIAN | – | | CENTRAL MIDALE (NON-UNIT) |
| 0.106 | 160 | 2.60 | 24.3 | 45.0 | 1.234 | 905 | 1340 | MISSISSIPPIAN | 1958 | MINARD | MIDALE |
| 0.073 | 170 | 7.40 | 13.6 | 40.0 | 1.111 | 909 | 1163 | MISSISSIPPIAN | 1958 | MOOSE VALLEY | TILSTON |

# OIL RESERVES

| POOL | PRODUCING HORIZON | INITIAL OIL IN PLACE MILLION CUBIC METRES | ESTIMATED RECOVERY PRIMARY | ESTIMATED RECOVERY ENHANCED | ESTIMATED RECOVERY TOTAL | INITIAL RESERVES PRIMARY | INITIAL RESERVES ENHANCED | INITIAL RESERVES TOTAL | CUMULATIVE PROD. DEC 31/86 | REMAINING RESERVES | 1986 PROD 1000 m³ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | PER CENT | | | MILLION CUBIC METRES | | | | | |
| NEPTUNE | RATCLIFFE | 3.857 | 12.70 | 0.00 | 12.70 | 0.490 | 0.000 | 0.490 | 0.276 | 0.214 | 15.952 |
| NORTH HANDSWORTH | ALIDA | 2.565 | 17.20 | 0.00 | 17.20 | 0.441 | 0.000 | 0.441 | 0.319 | 0.122 | 10.225 |
| OUNGRE | RATCLIFFE (OUNGRE VOL UNIT NO. 1) | 14.529 | 7.90 | 6.80 | 14.70 | 1.148 | 0.988 | 2.136 | 1.103 | 1.033 | 43.589 |
| | RATCLIFFE (NON-UNIT) | 2.420 | 13.70 | 0.00 | 13.70 | 0.332 | 0.000 | 0.332 | 0.109 | 0.223 | 17.273 |
| RALPH | MIDALE | 1.225 | 12.70 | 0.00 | 12.70 | 0.156 | 0.000 | 0.156 | 0.131 | 0.025 | 4.955 |
| RED JACKET | GRAVELBOURG | 0.221 | 6.30 | 0.00 | 6.30 | 0.014 | 0.000 | 0.014 | 0.004 | 0.010 | 2.014 |
| RED JACKET | SHAUNAVON-GRAVELBOURG | 3.900 | 8.20 | 0.00 | 8.20 | 0.326 | 0.000 | 0.326 | 0.059 | 0.267 | 29.874 |
| SKINNER LAKE | RATCLIFFE | 0.941 | 5.70 | 0.00 | 5.70 | 0.054 | 0.000 | 0.054 | 0.010 | 0.044 | 3.618 |
| STOUGHTON | FROBISHER-ALIDA | 1.114 | 32.60 | 0.00 | 32.60 | 0.363 | 0.000 | 0.363 | 0.323 | 0.040 | 5.146 |
| STOUGHTON SOUTH | FROBISHER | 1.527 | 8.60 | 0.00 | 8.60 | 0.131 | 0.000 | 0.131 | 0.110 | 0.021 | 4.386 |
| TATAGWA | MIDALE | 15.738 | 4.60 | 0.00 | 4.60 | 0.724 | 0.000 | 0.724 | 0.274 | 0.450 | 44.688 |
| VIEWFIELD | FROBISHER (NON-UNIT) | 7.592 | 18.40 | 0.00 | 18.40 | 1.397 | 0.000 | 1.397 | 0.625 | 0.772 | 56.146 |
| VIEW HILL | MIDALE | 0.714 | 23.80 | 0.00 | 23.80 | 0.170 | 0.000 | 0.170 | 0.150 | 0.020 | 2.374 |
| WAPELLA | WAPELLA SAND | 11.201 | 20.40 | 0.00 | 20.40 | 2.285 | 0.000 | 2.285 | 1.336 | 0.949 | 85.262 |
| WEIR HILL | FROBISHER | 0.957 | 6.70 | 0.00 | 6.70 | 0.064 | 0.000 | 0.064 | 0.051 | 0.013 | 1.830 |
| WEST INNES | FROBISHER | 0.862 | 19.50 | 0.00 | 19.50 | 0.168 | 0.000 | 0.168 | 0.161 | 0.007 | 2.210 |
| WEST KINGSFORD | MIDALE (CULLEN UNIT) | 0.882 | 54.00 | 0.00 | 54.00 | 0.476 | 0.000 | 0.476 | 0.419 | 0.057 | 4.782 |
| | MIDALE (NON-UNIT) | 2.860 | 20.50 | 0.00 | 20.50 | 0.586 | 0.000 | 0.586 | 0.525 | 0.061 | 8.850 |
| WEYBURN | FROBISHER | 5.836 | 10.40 | 0.00 | 10.40 | 0.607 | 0.000 | 0.607 | 0.433 | 0.174 | 19.589 |
| WEYBURN | MIDALE (UNIT) | 176.185 | 13.50 | 14.90 | 28.40 | 23.785 | 26.252 | 50.037 | 41.789 | 8.248 | 563.757 |
| | MIDALE (NON-UNIT) | 35.711 | 5.70 | 0.00 | 5.70 | 2.036 | 0.000 | 2.036 | 1.363 | 0.673 | 116.390 |
| WEYBURN NORTH | FROBISHER | 4.162 | 3.10 | 0.00 | 3.10 | 0.129 | 0.000 | 0.129 | 0.036 | 0.093 | 12.400 |
| WEYBURN NORTH | MIDALE | 3.466 | 2.20 | 0.00 | 2.20 | 0.076 | 0.000 | 0.076 | 0.036 | 0.040 | 9.872 |
| MISCELLANEOUS | ALIDA | 0.284 | 20.10 | 0.00 | 20.10 | 0.057 | 0.000 | 0.057 | 0.044 | 0.013 | 1.609 |
| | BAKKEN | 0.121 | 1.70 | 0.00 | 1.70 | 0.002 | 0.000 | 0.002 | 0.002 | 0.000 | 0.000 |
| | BIRDBEAR | 0.499 | 8.00 | 0.00 | 8.00 | 0.040 | 0.000 | 0.040 | 0.014 | 0.026 | 3.810 |
| | FROBISHER | 5.982 | 9.90 | 0.00 | 9.90 | 0.592 | 0.000 | 0.592 | 0.278 | 0.314 | 46.649 |
| | FROBISHER-ALIDA | 1.129 | 1.90 | 0.00 | 1.90 | 0.021 | 0.000 | 0.021 | 0.013 | 0.008 | 1.844 |
| | GRAVELBOURG | 0.131 | 15.80 | 0.00 | 15.80 | 0.021 | 0.000 | 0.021 | 0.002 | 0.019 | 1.961 |
| | JURASSIC | 4.170 | 6.20 | 0.00 | 6.20 | 0.259 | 0.000 | 0.259 | 0.122 | 0.137 | 14.165 |
| | MIDALE | 43.830 | 5.10 | 0.00 | 5.10 | 2.235 | 0.000 | 2.235 | 0.770 | 1.465 | 251.124 |
| | RATCLIFFE | 4.201 | 10.30 | 0.00 | 10.30 | 0.433 | 0.000 | 0.433 | 0.210 | 0.223 | 18.151 |
| | SOURIS VALLEY | 0.256 | 4.70 | 0.00 | 4.70 | 0.012 | 0.000 | 0.012 | 0.008 | 0.004 | 2.026 |
| | **TOTAL AREA IV MEDIUM** | **542.561** | | | | **66.059** | **40.011** | **106.070** | **81.629** | **24.441** | **2139.835** |
| **AREA IV - LIGHT** | | | | | | | | | | | |
| ALAMEDA | MIDALE (CENTRAL UNIT) | 1.166 | 11.70 | 26.20 | 37.90 | 0.136 | 0.305 | 0.441 | 0.382 | 0.059 | 6.966 |
| | MIDALE (EAST UNIT) | 4.844 | 16.00 | 22.00 | 38.00 | 0.775 | 1.066 | 1.841 | 1.495 | 0.346 | 24.786 |
| | MIDALE (NORTH UNIT) | 1.001 | 12.00 | 16.50 | 28.50 | 0.120 | 0.165 | 0.285 | 0.254 | 0.031 | 3.419 |
| | MIDALE (SOUTH UNIT) | 1.792 | 13.30 | 13.00 | 26.30 | 0.238 | 0.233 | 0.471 | 0.412 | 0.059 | 6.671 |
| | MIDALE (NON-UNIT) | 3.453 | 8.00 | 0.00 | 8.00 | 0.276 | 0.000 | 0.276 | 0.186 | 0.090 | 24.089 |
| ALAMEDA WEST | FROBISHER | 0.151 | 0.50 | 0.00 | 0.50 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| ALAMEDA WEST | MIDALE (VOLUNTARY UNIT NO. 1) | 0.767 | 11.20 | 10.00 | 21.20 | 0.086 | 0.077 | 0.163 | 0.029 | 0.134 | 4.203 |
| | MIDALE (NON-UNIT) | 0.122 | 1.50 | 0.00 | 1.50 | 0.002 | 0.000 | 0.002 | 0.001 | 0.001 | 0.270 |
| ALIDA EAST | FROBISHER-ALIDA (UNIT) | 11.222 | 20.80 | 0.00 | 20.80 | 2.334 | 0.000 | 2.334 | 1.832 | 0.502 | 47.645 |
| | FROBISHER-ALIDA (NON-UNIT) | 0.418 | 9.00 | 0.00 | 9.00 | 0.038 | 0.000 | 0.038 | 0.033 | 0.005 | 1.164 |
| ALIDA NORTH | ALIDA | 0.847 | 27.00 | 0.00 | 27.00 | 0.229 | 0.000 | 0.229 | 0.113 | 0.116 | 9.436 |
| ALIDA WEST | ALIDA | 7.260 | 29.00 | 0.00 | 29.00 | 2.105 | 0.000 | 2.105 | 1.801 | 0.304 | 33.689 |
| ARCOLA | FROBISHER-ALIDA | 5.333 | 27.50 | 0.00 | 27.50 | 1.467 | 0.000 | 1.467 | 0.969 | 0.498 | 55.789 |
| AUBURNTON | FROBISHER-ALIDA | 0.261 | 14.00 | 0.00 | 14.00 | 0.037 | 0.000 | 0.037 | 0.006 | 0.031 | 3.409 |
| BIENFAIT | MIDALE BEDS | 2.929 | 18.40 | 0.00 | 18.40 | 0.539 | 0.000 | 0.539 | 0.183 | 0.356 | 40.709 |
| BROWNING | FROBISHER-ALIDA | 5.126 | 22.00 | 0.00 | 22.00 | 1.128 | 0.000 | 1.128 | 0.848 | 0.280 | 26.623 |

# OIL RESERVOIR DATA

| OIL IN PLACE m³/m³ | DEVELOPED AREA HECTARES | NET PAY METRES | AVERAGE POROSITY —PER CENT— | AVERAGE CONNATE WATER —PER CENT— | FORMATION VOLUME FACTOR | OIL DENSITY KG/M³ | PRODUCING DEPTH METRES | SYSTEM | DISCOVERY YEAR | POOL | PRODUCING HORIZON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.079 | 1004 | 4.85 | 16.0 | 45.0 | 1.111 | 910 | 1764 | MISSISSIPPIAN | 1967 | NEPTUNE | RATCLIFFE |
| 0.049 | 765 | 6.70 | 10.0 | 35.0 | 1.333 | 885 | 1178 | MISSISSIPPIAN | 1965 | NORTH HANDSWORTH | ALIDA |
| 0.080 | 2784 | 6.52 | 17.9 | 45.0 | 1.230 | 878 | 1828 | MISSISSIPPIAN | 1959 | OUNGRE | RATCLIFFE (OUNGRE VOL UNIT NO. 1) |
| 0.081 | 1068 | 2.80 | 18.1 | 45.0 | 1.230 | 878 | – | MISSISSIPPIAN | – | | RATCLIFFE (NON-UNIT) |
| 0.040 | 777 | 3.90 | 10.3 | 55.9 | 1.124 | 863 | 1315 | MISSISSIPPIAN | 1973 | RALPH | MIDALE |
| 0.182 | 32 | 3.60 | 31.0 | 38.0 | 1.003 | 930 | 735 | JURASSIC | 1965 | RED JACKET | GRAVELBOURG |
| 0.172 | 356 | 6.50 | 27.6 | 37.5 | 1.003 | 948 | 665 | JURASSIC | 1964 | RED JACKET | SHAUNAVON-GRAVELBOURG |
| 0.099 | 259 | 3.67 | 20.0 | 45.0 | 1.111 | 893 | 1723 | MISSISSIPPIAN | 1969 | SKINNER LAKE | RATCLIFFE |
| 0.055 | 473 | 4.30 | 9.8 | 35.0 | 1.163 | 882 | 1268 | MISSISSIPPIAN | 1960 | STOUGHTON | FROBISHER-ALIDA |
| 0.036 | 518 | 8.20 | 7.6 | 45.0 | 1.163 | 892 | 1265 | MISSISSIPPIAN | 1974 | STOUGHTON SOUTH | FROBISHER |
| 0.124 | 1295 | 9.60 | 20.7 | 35.0 | 1.085 | 904 | 1478 | MISSISSIPPIAN | 1977 | TATAGWA | MIDALE |
| 0.056 | 1061 | 12.60 | 11.0 | 35.0 | 1.279 | 872 | 1270 | MISSISSIPPIAN | 1969 | VIEWFIELD | FROBISHER (NON-UNIT) |
| 0.049 | 259 | 5.61 | 11.1 | 50.0 | 1.129 | 885 | 1539 | MISSISSIPPIAN | 1959 | VIEW HILL | MIDALE |
| 0.180 | 1036 | 6.00 | 26.0 | 30.0 | 1.010 | 906 | 701 | CRET-JURASSIC | 1952 | WAPELLA | WAPELLA SAND |
| 0.053 | 178 | 10.21 | 10.8 | 35.0 | 1.333 | 871 | 1353 | MISSISSIPPIAN | 1968 | WEIR HILL | FROBISHER |
| 0.056 | 291 | 5.30 | 10.0 | 35.0 | 1.163 | 893 | 1335 | MISSISSIPPIAN | 1965 | WEST INNES | FROBISHER |
| 0.057 | 291 | 5.36 | 10.4 | 35.0 | 1.196 | 895 | 1485 | MISSISSIPPIAN | 1955 | WEST KINGSFORD | MIDALE (CULLEN UNIT) |
| 0.063 | 631 | 5.50 | 11.6 | 35.0 | 1.205 | 882 | – | MISSISSIPPIAN | – | | MIDALE (NON-UNIT) |
| 0.070 | 1391 | 6.00 | 13.1 | 40.0 | 1.124 | 876 | 1417 | MISSISSIPPIAN | 1954 | WEYBURN | FROBISHER |
| 0.105 | 21529 | 7.83 | 17.2 | 31.7 | 1.124 | 884 | 1399 | MISSISSIPPIAN | 1954 | WEYBURN | MIDALE (UNIT) |
| 0.106 | 6227 | 5.40 | 17.3 | 31.0 | 1.124 | 877 | – | MISSISSIPPIAN | – | | MIDALE (NON-UNIT) |
| 0.064 | 809 | 6.10 | 15.8 | 40.0 | 1.124 | 886 | 1376 | MISSISSIPPIAN | 1965 | WEYBURN NORTH | FROBISHER |
| 0.063 | 874 | 6.30 | 11.8 | 40.0 | 1.124 | 879 | 1354 | MISSISSIPPIAN | 1958 | WEYBURN NORTH | MIDALE |
| 0.066 | 65 | 6.40 | 14.0 | 35.0 | 1.333 | 880 | – | MISSISSIPPIAN | – | MISCELLANEOUS | ALIDA |
| 0.075 | 64 | 2.50 | 10.7 | 25.0 | 1.064 | – | – | MISSISSIPPIAN | – | | BAKKEN |
| 0.068 | 162 | 3.50 | 13.6 | 25.0 | 1.176 | – | – | DEVONIAN | – | | BIRDBEAR |
| 0.040 | 2687 | 5.50 | 9.1 | 50.0 | 1.124 | 885 | – | MISSISSIPPIAN | – | | FROBISHER |
| 0.082 | 388 | 4.70 | 12.7 | 35.0 | 1.333 | 874 | – | MISSISSIPPIAN | – | | FROBISHER-ALIDA |
| 0.183 | 32 | 2.50 | 29.0 | 25.0 | 1.333 | – | – | JURASSIC | – | | GRAVELBOURG |
| 0.180 | 356 | 6.50 | 26.0 | 30.0 | 1.010 | 897 | – | JURASSIC | – | | JURASSIC |
| 0.078 | 6054 | 9.30 | 17.5 | 50.0 | 1.124 | 885 | – | MISSISSIPPIAN | – | | MIDALE |
| 0.075 | 1036 | 5.40 | 15.4 | 35.0 | 1.333 | 889 | – | MISSISSIPPIAN | – | | RATCLIFFE |
| 0.054 | 84 | 7.40 | 10.0 | 40.0 | 1.111 | – | – | MISSISSIPPIAN | – | | SOURIS VALLEY |

**AREA IV - LIGHT**

| OIL IN PLACE m³/m³ | DEVELOPED AREA HECTARES | NET PAY METRES | AVERAGE POROSITY —PER CENT— | AVERAGE CONNATE WATER —PER CENT— | FORMATION VOLUME FACTOR | OIL DENSITY KG/M³ | PRODUCING DEPTH METRES | SYSTEM | DISCOVERY YEAR | POOL | PRODUCING HORIZON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.068 | 880 | 2.53 | 16.3 | 42.8 | 1.376 | 823 | 1347 | MISSISSIPPIAN | 1956 | ALAMEDA | MIDALE (CENTRAL UNIT) |
| 0.074 | 2363 | 2.77 | 17.2 | 40.8 | 1.376 | 826 | – | MISSISSIPPIAN | – | | MIDALE (EAST UNIT) |
| 0.069 | 421 | 3.44 | 16.8 | 42.7 | 1.376 | – | – | MISSISSIPPIAN | – | | MIDALE (NORTH UNIT) |
| 0.059 | 906 | 3.35 | 14.5 | 45.0 | 1.361 | – | – | MISSISSIPPIAN | – | | MIDALE (SOUTH UNIT) |
| 0.046 | 1732 | 4.30 | 11.0 | 42.0 | 1.376 | 842 | – | MISSISSIPPIAN | – | | MIDALE (NON-UNIT) |
| 0.043 | 32 | 11.00 | 8.8 | 36.0 | 1.333 | 844 | 1361 | MISSISSIPPIAN | 1962 | ALAMEDA WEST | FROBISHER |
| 0.048 | 181 | 8.90 | 11.7 | 45.0 | 1.361 | 843 | 1356 | MISSISSIPPIAN | – | ALAMEDA WEST | MIDALE (VOLUNTARY UNIT NO. 1) |
| 0.048 | 32 | 8.00 | 11.7 | 45.0 | 1.361 | – | – | MISSISSIPPIAN | – | | MIDALE (NON-UNIT) |
| 0.087 | 1619 | 8.00 | 16.5 | 30.0 | 1.333 | 824 | 1122 | MISSISSIPPIAN | 1964 | ALIDA EAST | FROBISHER-ALIDA (UNIT) |
| 0.061 | 65 | 7.90 | 16.7 | 36.0 | 1.333 | – | – | MISSISSIPPIAN | – | | FROBISHER-ALIDA (NON-UNIT) |
| 0.096 | 112 | 8.00 | 18.0 | 30.0 | 1.333 | 836 | 1143 | MISSISSIPPIAN | 1962 | ALIDA NORTH | ALIDA |
| 0.075 | 957 | 10.10 | 14.1 | 30.8 | 1.299 | 836 | 1143 | MISSISSIPPIAN | 1955 | ALIDA WEST | ALIDA |
| 0.083 | 999 | 6.60 | 17.1 | 35.0 | 1.333 | 854 | 1189 | MISSISSIPPIAN | 1964 | ARCOLA | FROBISHER-ALIDA |
| 0.084 | 80 | 5.10 | 13.1 | 35.0 | 1.333 | 832 | 1167 | MISSISSIPPIAN | 1966 | AUBURNTON | FROBISHER-ALIDA |
| 0.046 | 580 | 11.40 | 8.3 | 35.0 | 1.178 | 852 | 1589 | MISSISSIPPIAN | 1960 | BIENFAIT | MIDALE BEDS |
| 0.083 | 1123 | 7.20 | 13.0 | 35.0 | 1.333 | 853 | 1280 | MISSISSIPPIAN | 1957 | BROWNING | FROBISHER-ALIDA |

# OIL RESERVES

| POOL | PRODUCING HORIZON | INITIAL OIL IN PLACE MILLION CUBIC METRES | ESTIMATED RECOVERY PRIMARY | ENHANCED | TOTAL | INITIAL RESERVES PRIMARY | ENHANCED | TOTAL | CUMULATIVE PROD. DEC 31/86 | REMAINING RESERVES | 1986 PROD |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  | ———PER CENT——— |  |  | ———MILLION CUBIC METRES——— |  |  |  |  | 1000 $m^3$ |
| CANTAL | FROBISHER-ALIDA (VOL UNIT NO. 1) | 0.185 | 43.00 | 0.00 | 43.00 | 0.080 | 0.000 | 0.080 | 0.051 | 0.029 | 2.347 |
|  | FROBISHER-ALIDA (NON-UNIT) | 4.426 | 6.70 | 0.00 | 6.70 | 0.297 | 0.000 | 0.297 | 0.167 | 0.130 | 60.962 |
| CANTAL SOUTH | FROBISHER-ALIDA | 2.837 | 27.50 | 0.00 | 27.50 | 0.780 | 0.000 | 0.780 | 0.713 | 0.067 | 10.460 |
| CARNDUFF | FROBISHER | 4.359 | 14.60 | 0.00 | 14.60 | 0.636 | 0.000 | 0.636 | 0.528 | 0.108 | 12.204 |
| CARNDUFF | MIDALE (EAST UNIT) | 8.421 | 15.00 | 23.20 | 38.20 | 1.263 | 1.954 | 3.217 | 2.687 | 0.530 | 31.656 |
|  | MIDALE (SOUTH VOL UNIT) | 1.102 | 15.00 | 25.00 | 40.00 | 0.165 | 0.276 | 0.441 | 0.074 | 0.367 | 5.516 |
|  | MIDALE (WEST UNIT) | 3.421 | 13.00 | 30.40 | 43.40 | 0.445 | 1.040 | 1.485 | 1.416 | 0.069 | 8.261 |
|  | MIDALE (VOLUNTARY UNIT NO. 1) | 0.433 | 5.20 | 14.40 | 19.60 | 0.023 | 0.062 | 0.085 | 0.052 | 0.033 | 3.025 |
|  | MIDALE (NON-UNIT) | 1.832 | 7.50 | 4.00 | 11.50 | 0.137 | 0.073 | 0.210 | 0.153 | 0.057 | 5.656 |
| CLARILAW | FROBISHER-ALIDA | 0.599 | 24.50 | 0.00 | 24.50 | 0.147 | 0.000 | 0.147 | 0.101 | 0.046 | 5.724 |
| CLAIRLAW WEST | FROBISHER-ALIDA (KISBEY VOL UNIT) | 0.621 | 28.50 | 0.00 | 28.50 | 0.177 | 0.000 | 0.177 | 0.106 | 0.071 | 11.653 |
|  | FROBISHER-ALIDA (NON-UNIT) | 0.090 | 18.00 | 0.00 | 18.00 | 0.016 | 0.000 | 0.016 | 0.007 | 0.009 | 2.830 |
| CRYSTAL HILL | SOURIS VALLEY | 1.094 | 6.90 | 0.00 | 6.90 | 0.075 | 0.000 | 0.075 | 0.069 | 0.006 | 0.550 |
| DALESBORO | FROBISHER-ALIDA | 0.091 | 47.00 | 0.00 | 47.00 | 0.043 | 0.000 | 0.043 | 0.027 | 0.016 | 0.692 |
| EAST PINTO | FROBISHER | 0.024 | 5.00 | 0.00 | 5.00 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| EAST PINTO | MIDALE | 0.047 | 10.00 | 0.00 | 10.00 | 0.005 | 0.000 | 0.005 | 0.003 | 0.002 | 0.388 |
| EDENVALE | TILSTON | 2.446 | 3.60 | 0.00 | 3.60 | 0.088 | 0.000 | 0.088 | 0.072 | 0.016 | 3.302 |
| ELMORE | FROBISHER (VOLUNTARY UNIT) | 5.019 | 28.00 | 12.90 | 40.90 | 1.405 | 0.647 | 2.052 | 1.719 | 0.333 | 34.272 |
|  | FROBISHER (NON-UNIT) | 0.789 | 6.00 | 0.00 | 6.00 | 0.046 | 0.000 | 0.046 | 0.025 | 0.021 | 2.627 |
| ELMORE | MIDALE | 0.291 | 26.00 | 0.00 | 26.00 | 0.076 | 0.000 | 0.076 | 0.065 | 0.011 | 1.596 |
| FERTILE | TILSTON | 0.354 | 3.50 | 0.00 | 3.50 | 0.012 | 0.000 | 0.012 | 0.010 | 0.002 | 1.437 |
| FERTILE | TILSTON-SOURIS VALLEY | 0.743 | 1.20 | 0.00 | 1.20 | 0.009 | 0.000 | 0.009 | 0.006 | 0.003 | 0.508 |
| FLAT LAKE | RATCLIFFE (VOLUNTARY UNIT NO. 1) | 8.123 | 10.00 | 15.00 | 25.00 | 0.812 | 1.218 | 2.030 | 1.557 | 0.473 | 49.028 |
|  | RATCLIFFE (NON-UNIT) | 1.605 | 2.50 | 0.00 | 2.50 | 0.040 | 0.000 | 0.040 | 0.011 | 0.029 | 3.715 |
| FLORENCE | FROBISHER | 1.075 | 10.80 | 0.00 | 10.80 | 0.116 | 0.000 | 0.116 | 0.111 | 0.005 | 2.312 |
| FREDA LAKE | RATCLIFFE | 8.465 | 13.10 | 0.00 | 13.10 | 1.109 | 0.000 | 1.109 | 0.523 | 0.586 | 59.147 |
| FRYS | TILSTON-SOURIS VALLEY | 2.595 | 5.70 | 0.00 | 5.70 | 0.148 | 0.000 | 0.148 | 0.108 | 0.040 | 6.168 |
| FRYS EAST | TILSTON-SOURIS VALLEY | 0.698 | 4.70 | 0.00 | 4.70 | 0.033 | 0.000 | 0.033 | 0.019 | 0.014 | 6.675 |
| GAINSBOROUGH | FROBISHER-ALIDA (VOL UNIT) | 1.090 | 10.00 | 4.50 | 14.50 | 0.109 | 0.049 | 0.158 | 0.131 | 0.027 | 2.862 |
|  | FROBISHER-ALIDA (NON-UNIT) | 2.744 | 6.90 | 0.00 | 6.90 | 0.189 | 0.000 | 0.189 | 0.122 | 0.067 | 10.142 |
| GLEN EWEN | FROBISHER | 1.520 | 12.70 | 0.00 | 12.70 | 0.193 | 0.000 | 0.193 | 0.136 | 0.057 | 6.391 |
| GLEN EWEN | MIDALE (UNIT) | 5.905 | 13.00 | 6.60 | 19.60 | 0.768 | 0.390 | 1.158 | 1.004 | 0.154 | 15.429 |
|  | MIDALE (NON-UNIT) | 0.478 | 1.70 | 0.00 | 1.70 | 0.008 | 0.000 | 0.008 | 0.004 | 0.004 | 1.089 |
| HASTINGS | FROBISHER (UNIT) | 2.373 | 28.60 | 1.90 | 30.50 | 0.679 | 0.045 | 0.724 | 0.686 | 0.038 | 6.360 |
|  | FROBISHER (VOL UNIT NO. 1) | 4.724 | 17.00 | 11.30 | 28.30 | 0.803 | 0.534 | 1.337 | 1.066 | 0.271 | 18.828 |
|  | FROBISHER (VOL UNIT NO. 2) | 5.705 | 11.00 | 2.80 | 13.80 | 0.628 | 0.160 | 0.788 | 0.772 | 0.016 | 5.872 |
|  | FROBISHER (NON-UNIT) | 17.394 | 11.10 | 0.00 | 11.10 | 1.931 | 0.000 | 1.931 | 1.700 | 0.231 | 43.050 |
| HASTINGS EAST | FROBISHER | 3.238 | 9.50 | 0.00 | 9.50 | 0.308 | 0.000 | 0.308 | 0.168 | 0.140 | 19.658 |
| HAZELWOOD | TILSTON | 1.822 | 11.80 | 0.00 | 11.80 | 0.215 | 0.000 | 0.215 | 0.165 | 0.050 | 12.108 |
| HOFFER | RATCLIFFE LOWER POOL | 0.904 | 11.50 | 0.00 | 11.50 | 0.104 | 0.000 | 0.104 | 0.061 | 0.043 | 4.890 |
| HOFFER | RATCLIFFE UPPER POOL | 2.153 | 5.20 | 0.00 | 5.20 | 0.112 | 0.000 | 0.112 | 0.062 | 0.050 | 6.355 |
| HUMMINGBIRD | BIRDBEAR (VOLUNTARY UNIT NO. 1) | 1.174 | 41.50 | 0.00 | 41.50 | 0.487 | 0.000 | 0.487 | 0.442 | 0.045 | 7.882 |
| INGOLDSBY | FROBISHER-ALIDA (VOL UNIT) | 8.365 | 34.00 | 0.00 | 34.00 | 2.844 | 0.000 | 2.844 | 2.205 | 0.639 | 27.226 |
|  | FROBISHER-ALIDA (NON-UNIT) | 3.444 | 7.70 | 0.00 | 7.70 | 0.265 | 0.000 | 0.265 | 0.059 | 0.206 | 14.460 |
| INGOLDSBY WEST | FROBISHER-ALIDA | 0.580 | 9.50 | 0.00 | 9.50 | 0.055 | 0.000 | 0.055 | 0.005 | 0.050 | 5.008 |
| KENOSEE | TILSTON (VOLUNTARY UNIT) | 4.060 | 60.00 | 0.00 | 60.00 | 2.436 | 0.000 | 2.436 | 1.886 | 0.550 | 46.707 |
| KISBEY | BIRDBEAR | 1.459 | 15.00 | 0.00 | 15.00 | 0.219 | 0.000 | 0.219 | 0.137 | 0.082 | 11.934 |
| LIGHTNING | TILSTON | 0.818 | 5.50 | 0.00 | 5.50 | 0.050 | 0.000 | 0.050 | 0.045 | 0.005 | 3.370 |
| MOOSE MOUNTAIN | TILSTON | 4.042 | 19.50 | 0.00 | 19.50 | 0.788 | 0.000 | 0.788 | 0.511 | 0.277 | 37.703 |
| MORRISVIEW | FROBISHER-ALIDA | 0.722 | 25.00 | 0.00 | 25.00 | 0.181 | 0.000 | 0.181 | 0.172 | 0.009 | 3.176 |
| NORTH ANTLER | MIDALE (VOLUNTARY UNIT NO. 1) | 0.762 | 8.00 | 5.00 | 13.00 | 0.061 | 0.038 | 0.099 | 0.097 | 0.002 | 0.943 |
| NORTHGATE | FROBISHER | 0.278 | 15.50 | 0.00 | 15.50 | 0.043 | 0.000 | 0.043 | 0.042 | 0.001 | 0.253 |
| NORTHGATE | MIDALE (VOLUNTARY UNIT) | 3.190 | 8.70 | 1.00 | 9.70 | 0.278 | 0.032 | 0.310 | 0.252 | 0.058 | 5.099 |
|  | MIDALE (NON UNIT) | 0.036 | 22.00 | 0.00 | 22.00 | 0.008 | 0.000 | 0.008 | 0.006 | 0.002 | 0.726 |

# OIL RESERVOIR DATA

| OIL IN PLACE $m^3/m^3$ | DEVELOPED AREA HECTARES | NET PAY METRES | AVERAGE POROSITY ---PER CENT--- | AVERAGE CONNATE WATER ---PER CENT--- | FORMATION VOLUME FACTOR | OIL DENSITY $KG/M^3$ | PRODUCING DEPTH METRES | SYSTEM | DISCOVERY YEAR | POOL | PRODUCING HORIZON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.032 | 97 | 5.90 | 6.9 | 35.0 | 1.369 | 823 | 1196 | MISSISSIPPIAN | 1956 | CANTAL | FROBISHER-ALIDA (VOL UNIT NO. 1) |
| 0.069 | 659 | 9.70 | 14.2 | 35.0 | 1.333 | 834 | – | MISSISSIPPIAN | – | | FROBISHER-ALIDA (NON-UNIT) |
| 0.033 | 575 | 15.10 | 6.7 | 35.0 | 1.333 | 828 | 1135 | MISSISSIPPIAN | 1956 | CANTAL SOUTH | FROBISHER-ALIDA |
| 0.066 | 849 | 7.80 | 13.5 | 35.0 | 1.333 | 854 | 1298 | MISSISSIPPIAN | 1956 | CARNDUFF | FROBISHER |
| 0.076 | 5568 | 2.00 | 14.4 | 30.0 | 1.333 | 844 | 1280 | MISSISSIPPIAN | 1955 | CARNDUFF | MIDALE (EAST UNIT) |
| 0.064 | 680 | 2.53 | 12.2 | 30.0 | 1.333 | 839 | – | MISSISSIPPIAN | – | | MIDALE (SOUTH VOL UNIT) |
| 0.068 | 2104 | 2.40 | 12.9 | 30.0 | 1.333 | 844 | – | MISSISSIPPIAN | – | | MIDALE (WEST UNIT) |
| 0.072 | 223 | 2.70 | 13.7 | 30.0 | 1.333 | – | – | MISSISSIPPIAN | – | | MIDALE (VOLUNTARY UNIT NO. 1) |
| 0.059 | 666 | 4.70 | 12.0 | 35.0 | 1.333 | 835 | – | MISSISSIPPIAN | – | | MIDALE (NON-UNIT) |
| 0.057 | 244 | 4.30 | 11.7 | 35.0 | 1.333 | 858 | 1231 | MISSISSIPPIAN | 1963 | CLARILAW | FROBISHER-ALIDA |
| 0.059 | 194 | 5.40 | 11.4 | 35.0 | 1.250 | 843 | 1234 | MISSISSIPPIAN | 1963 | CLAIRLAW WEST | FROBISHER-ALIDA (KISBEY VOL UNIT) |
| 0.048 | 49 | 4.00 | 8.8 | 35.0 | 1.250 | – | – | MISSISSIPPIAN | – | | FROBISHER-ALIDA (NON-UNIT) |
| 0.059 | 354 | 5.20 | 11.0 | 40.0 | 1.111 | 861 | 1113 | MISSISSIPPIAN | 1966 | CRYSTAL HILL | SOURIS VALLEY |
| 0.055 | 34 | 4.90 | 11.2 | 35.0 | 1.333 | 853 | 1262 | MISSISSIPPIAN | 1966 | DALESBORO | FROBISHER-ALIDA |
| 0.045 | 32 | 1.68 | 9.2 | 35.0 | 1.333 | 843 | 1542 | MISSISSIPPIAN | 1974 | EAST PINTO | FROBISHER |
| 0.043 | 32 | 3.40 | 10.4 | 45.0 | 1.333 | 836 | 1536 | MISSISSIPPIAN | 1974 | EAST PINTO | MIDALE |
| 0.068 | 453 | 8.00 | 12.5 | 40.0 | 1.111 | 853 | 1126 | MISSISSIPPIAN | 1963 | EDENVALE | TILSTON |
| 0.082 | 874 | 7.00 | 15.9 | 40.0 | 1.163 | 871 | 1219 | MISSISSIPPIAN | 1961 | ELMORE | FROBISHER (VOLUNTARY UNIT) |
| 0.039 | 292 | 8.70 | 8.3 | 45.0 | 1.162 | 875 | – | MISSISSIPPIAN | – | | FROBISHER (NON-UNIT) |
| 0.056 | 194 | 2.70 | 11.4 | 35.0 | 1.333 | 841 | 1204 | MISSISSIPPIAN | 1961 | ELMORE | MIDALE |
| 0.079 | 65 | 6.90 | 14.6 | 40.0 | 1.111 | 860 | 953 | MISSISSIPPIAN | 1963 | FERTILE | TILSTON |
| 0.062 | 130 | 9.20 | 11.5 | 40.0 | 1.111 | 860 | 953 | MISSISSIPPIAN | 1956 | FERTILE | TILSTON-SOURIS VALLEY |
| 0.060 | 2428 | 5.60 | 14.1 | 49.2 | 1.199 | 865 | 1956 | MISSISSIPPIAN | 1965 | FLAT LAKE | RATCLIFFE (VOLUNTARY UNIT NO. 1) |
| 0.057 | 388 | 7.30 | 10.9 | 35.0 | 1.250 | 848 | – | MISSISSIPPIAN | – | | RATCLIFFE (NON-UNIT) |
| 0.058 | 292 | 6.40 | 11.8 | 35.0 | 1.333 | 843 | 1290 | MISSISSIPPIAN | 1965 | FLORENCE | FROBISHER |
| 0.123 | 2381 | 2.90 | 22.7 | 40.0 | 1.111 | 870 | 1694 | MISSISSIPPIAN | 1967 | FREDA LAKE | RATCLIFFE |
| 0.070 | 291 | 12.70 | 13.0 | 40.0 | 1.111 | 846 | 974 | MISSISSIPPIAN | 1958 | FRYS | TILSTON-SOURIS VALLEY |
| 0.076 | 130 | 7.10 | 14.0 | 40.0 | 1.111 | 846 | 974 | MISSISSIPPIAN | 1964 | FRYS EAST | TILSTON-SOURIS VALLEY |
| 0.070 | 243 | 6.40 | 11.5 | 30.0 | 1.149 | 858 | 1072 | MISSISSIPPIAN | 1956 | GAINSBOROUGH | FROBISHER-ALIDA (VOL UNIT) |
| 0.077 | 518 | 6.90 | 12.6 | 30.0 | 1.149 | 865 | – | MISSISSIPPIAN | – | | FROBISHER-ALIDA (NON-UNIT) |
| 0.049 | 551 | 5.60 | 10.1 | 35.0 | 1.333 | 818 | 1304 | MISSISSIPPIAN | 1954 | GLEN EWEN | FROBISHER |
| 0.067 | 4209 | 2.10 | 13.7 | 35.0 | 1.333 | 828 | 1280 | MISSISSIPPIAN | 1954 | GLEN EWEN | MIDALE (UNIT) |
| 0.068 | 146 | 4.80 | 14.0 | 35.0 | 1.333 | 826 | – | MISSISSIPPIAN | – | | MIDALE (NON-UNIT) |
| 0.073 | 502 | 6.50 | 14.8 | 37.0 | 1.282 | 833 | 1200 | MISSISSIPPIAN | 1955 | HASTINGS | FROBISHER (UNIT) |
| 0.067 | 1105 | 6.40 | 13.7 | 35.0 | 1.333 | – | – | MISSISSIPPIAN | – | | FROBISHER (VOL UNIT NO. 1) |
| 0.096 | 971 | 6.10 | 19.6 | 37.0 | 1.282 | 843 | – | MISSISSIPPIAN | – | | FROBISHER (VOL UNIT NO. 2) |
| 0.050 | 3223 | 10.90 | 11.0 | 40.0 | 1.333 | 842 | – | MISSISSIPPIAN | – | | FROBISHER (NON-UNIT) |
| 0.039 | 891 | 9.20 | 8.1 | 35.0 | 1.333 | 837 | 1147 | MISSISSIPPIAN | 1956 | HASTINGS EAST | FROBISHER |
| 0.069 | 227 | 11.70 | 12.7 | 40.0 | 1.111 | 848 | 1149 | MISSISSIPPIAN | 1963 | HAZELWOOD | TILSTON |
| 0.056 | 194 | 8.30 | 10.8 | 35.0 | 1.250 | 880 | 1935 | MISSISSIPPIAN | 1964 | HOFFER | RATCLIFFE LOWER POOL |
| 0.063 | 713 | 4.60 | 12.1 | 35.0 | 1.250 | 876 | 1927 | MISSISSIPPIAN | 1964 | HOFFER | RATCLIFFE UPPER POOL |
| 0.062 | 209 | 9.10 | 10.3 | 28.7 | 1.190 | 830 | 2326 | DEVONIAN | 1966 | HUMMINGBIRD | BIRDBEAR (VOLUNTARY UNIT NO. 1) |
| 0.079 | 1214 | 8.70 | 13.0 | 30.0 | 1.149 | 865 | 1089 | MISSISSIPPIAN | 1955 | INGOLDSBY | FROBISHER-ALIDA (VOL UNIT) |
| 0.069 | 551 | 9.00 | 11.4 | 30.0 | 1.149 | 850 | – | MISSISSIPPIAN | – | | FROBISHER-ALIDA (NON-UNIT) |
| 0.076 | 130 | 5.90 | 12.0 | 30.0 | 1.111 | 850 | – | MISSISSIPPIAN | 1966 | INGOLDSBY WEST | FROBISHER-ALIDA |
| 0.083 | 996 | 4.90 | 16.0 | 35.0 | 1.250 | 848 | 1196 | MISSISSIPPIAN | 1958 | KENOSEE | TILSTON (VOLUNTARY UNIT) |
| 0.076 | 227 | 8.50 | 12.0 | 25.0 | 1.190 | 845 | 1626 | DEVONIAN | 1968 | KISBEY | BIRDBEAR |
| 0.074 | 275 | 4.50 | 13.7 | 40.0 | 1.111 | 843 | 1056 | MISSISSIPPIAN | 1957 | LIGHTNING | TILSTON |
| 0.069 | 563 | 10.10 | 12.3 | 40.0 | 1.075 | 864 | 1166 | MISSISSIPPIAN | 1960 | MOOSE MOUNTAIN | TILSTON |
| 0.071 | 227 | 4.50 | 13.6 | 35.0 | 1.250 | 843 | 1266 | MISSISSIPPIAN | 1967 | MORRISVIEW | FROBISHER-ALIDA |
| 0.059 | 233 | 5.50 | 12.2 | 35.0 | 1.333 | 827 | 1152 | MISSISSIPPIAN | 1965 | NORTH ANTLER | MIDALE (VOLUNTARY UNIT NO. 1) |
| 0.025 | 162 | 6.90 | 5.1 | 35.0 | 1.333 | 843 | 1565 | MISSISSIPPIAN | 1963 | NORTHGATE | FROBISHER |
| 0.046 | 1456 | 4.80 | 15.6 | 55.0 | 1.536 | 836 | 1575 | MISSISSIPPIAN | – | NORTHGATE | MIDALE (VOLUNTARY UNIT) |
| 0.059 | 16 | 3.80 | 14.3 | 45.0 | 1.333 | 837 | – | MISSISSIPPIAN | 1963 | | MIDALE (NON UNIT) |

# OIL RESERVES

| POOL | PRODUCING HORIZON | INITIAL OIL IN PLACE MILLION CUBIC METRES | ESTIMATED RECOVERY PRIMARY | ESTIMATED RECOVERY ENHANCED | ESTIMATED RECOVERY TOTAL | INITIAL RESERVES PRIMARY | INITIAL RESERVES ENHANCED | INITIAL RESERVES TOTAL | CUMULATIVE PROD. DEC 31/86 | REMAINING RESERVES | 1986 PROD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ----------PER CENT---------- | | | ----------MILLION CUBIC METRES---------- | | | | | 1000 $m^3$ |
| NOTTINGHAM | ALIDA (NORTH ALIDA BEDS UNIT) | 9.382 | 19.70 | 0.00 | 19.70 | 1.848 | 0.000 | 1.848 | 1.455 | 0.393 | 22.892 |
| | ALIDA (NON-UNIT) | 3.536 | 25.80 | 0.00 | 25.80 | 0.912 | 0.000 | 0.912 | 0.808 | 0.104 | 14.501 |
| OAKLEY | FROBISHER | 0.666 | 18.00 | 0.00 | 18.00 | 0.120 | 0.000 | 0.120 | 0.107 | 0.013 | 2.178 |
| PARKMAN | SOURIS VALLEY | 1.298 | 14.30 | 0.00 | 14.30 | 0.186 | 0.000 | 0.186 | 0.161 | 0.025 | 8.710 |
| PARKMAN | TILSTON | 1.800 | 11.50 | 0.00 | 11.50 | 0.207 | 0.000 | 0.207 | 0.129 | 0.078 | 14.975 |
| PARKMAN | TILSTON-SOURIS VALLEY | 32.406 | 13.50 | 0.00 | 13.50 | 4.375 | 0.000 | 4.375 | 3.199 | 1.176 | 134.667 |
| PARKMAN SOUTH | TILSTON-SOURIS VALLEY | 1.843 | 8.50 | 0.00 | 8.50 | 0.157 | 0.000 | 0.157 | 0.113 | 0.044 | 4.124 |
| PINTO | FROBISHER | 1.653 | 26.00 | 0.00 | 26.00 | 0.430 | 0.000 | 0.430 | 0.396 | 0.034 | 11.844 |
| PINTO | MIDALE (SOUTH PINTO UNIT) | 5.030 | 10.40 | 4.50 | 14.90 | 0.523 | 0.226 | 0.749 | 0.591 | 0.158 | 9.634 |
| | MIDALE (NON-UNIT) | 9.688 | 7.20 | 0.00 | 7.20 | 0.698 | 0.000 | 0.698 | 0.520 | 0.178 | 38.742 |
| QUEENSDALE EAST | FROBISHER-ALIDA (NORTH CANTAL UNIT) | 2.068 | 51.00 | 0.00 | 51.00 | 1.055 | 0.000 | 1.055 | 0.930 | 0.125 | 15.817 |
| | FROBISHER-ALIDA (NON-UNIT) | 14.183 | 50.00 | 0.00 | 50.00 | 7.092 | 0.000 | 7.092 | 4.354 | 2.738 | 190.329 |
| QUEENSDALE NORTH | ALIDA | 1.765 | 15.80 | 0.00 | 15.80 | 0.279 | 0.000 | 0.279 | 0.221 | 0.058 | 9.335 |
| QUEENSDALE WEST | ALIDA | 2.567 | 32.50 | 0.00 | 32.50 | 0.834 | 0.000 | 0.834 | 0.711 | 0.123 | 13.122 |
| ROCANVILLE | BAKKEN SAND | 2.744 | 21.50 | 0.00 | 21.50 | 0.590 | 0.000 | 0.590 | 0.297 | 0.293 | 11.967 |
| RONCOTT | BAKKEN SAND | 1.037 | 10.00 | 0.00 | 10.00 | 0.104 | 0.000 | 0.104 | 0.099 | 0.005 | 1.643 |
| ROSEBANK | FROBISHER-ALIDA (VOL UNIT NO. 1) | 8.732 | 45.20 | 0.00 | 45.20 | 3.947 | 0.000 | 3.947 | 3.521 | 0.426 | 31.813 |
| | ALIDA (NON-UNIT) | 9.509 | 15.80 | 0.00 | 15.80 | 1.502 | 0.000 | 1.502 | 1.003 | 0.499 | 30.664 |
| ROSEBANK SOUTH | ALIDA | 1.369 | 16.00 | 0.00 | 16.00 | 0.219 | 0.000 | 0.219 | 0.126 | 0.093 | 10.297 |
| SHERWOOD | FROBISHER | 4.348 | 43.50 | 0.00 | 43.50 | 1.891 | 0.000 | 1.891 | 1.672 | 0.219 | 26.594 |
| SILVERTON | FROBISHER | 0.663 | 13.00 | 0.00 | 13.00 | 0.086 | 0.000 | 0.086 | 0.076 | 0.010 | 2.032 |
| SKINNER LAKE | RATCLIFFE | 3.765 | 18.50 | 0.00 | 18.50 | 0.697 | 0.000 | 0.697 | 0.246 | 0.451 | 17.793 |
| SOURIS FLAT | FROBISHER | 2.564 | 26.50 | 0.00 | 26.50 | 0.679 | 0.000 | 0.679 | 0.577 | 0.102 | 13.438 |
| SOUTH FLETWODE | TILSTON | 1.578 | 33.50 | 0.00 | 33.50 | 0.529 | 0.000 | 0.529 | 0.430 | 0.099 | 15.141 |
| STAR VALLEY | FROBISHER-ALIDA | 4.378 | 53.00 | 0.00 | 53.00 | 2.320 | 0.000 | 2.320 | 1.284 | 1.036 | 72.235 |
| STEELMAN | FROBISHER (VOL UNIT NO. 1) | 0.910 | 30.50 | 0.00 | 30.50 | 0.278 | 0.000 | 0.278 | 0.256 | 0.022 | 2.943 |
| | FROBISHER (DOUGLASTON UNIT) | 0.850 | 26.00 | 0.00 | 26.00 | 0.221 | 0.000 | 0.221 | 0.201 | 0.020 | 2.761 |
| | FROBISHER (NON-UNIT) | 9.193 | 18.50 | 0.00 | 18.50 | 1.701 | 0.000 | 1.701 | 1.571 | 0.130 | 34.293 |
| STEELMAN | MIDALE (UNIT IA) | 18.361 | 16.00 | 32.00 | 48.00 | 2.938 | 5.876 | 8.814 | 8.289 | 0.525 | 84.633 |
| | MIDALE (UNIT II) | 16.648 | 23.00 | 30.80 | 53.80 | 3.829 | 5.128 | 8.957 | 7.741 | 1.216 | 85.209 |
| | MIDALE (UNIT III) | 11.465 | 16.00 | 23.80 | 39.80 | 1.834 | 2.729 | 4.563 | 4.008 | 0.555 | 51.694 |
| | MIDALE (UNIT IV) | 13.443 | 15.00 | 26.00 | 41.00 | 2.016 | 3.495 | 5.511 | 4.626 | 0.885 | 83.401 |
| | MIDALE (UNIT V) | 6.555 | 15.00 | 11.40 | 26.40 | 0.983 | 0.747 | 1.730 | 1.619 | 0.111 | 15.464 |
| | MIDALE (UNIT VI) | 24.729 | 16.00 | 22.00 | 38.00 | 3.957 | 5.440 | 9.397 | 8.783 | 0.614 | 75.117 |
| | MIDALE (UNIT VII) | 2.508 | 10.00 | 26.80 | 36.80 | 0.251 | 0.672 | 0.923 | 0.748 | 0.175 | 13.326 |
| | MIDALE (DOUGLASTON UNIT) | 1.948 | 12.30 | 16.40 | 28.70 | 0.240 | 0.319 | 0.559 | 0.435 | 0.124 | 12.566 |
| | MIDALE (LAMPMAN UNIT) | 0.926 | 13.00 | 13.00 | 26.00 | 0.120 | 0.120 | 0.240 | 0.221 | 0.019 | 3.110 |
| | MIDALE (NORTH VOL UNIT NO. 1) | 1.949 | 10.00 | 14.50 | 24.50 | 0.195 | 0.283 | 0.478 | 0.155 | 0.323 | 15.776 |
| | MIDALE (NORTH VOL UNIT NO. 2) | 1.875 | 5.30 | 0.00 | 5.30 | 0.099 | 0.000 | 0.099 | 0.080 | 0.019 | 7.176 |
| | MIDALE (NON-UNIT) | 6.549 | 10.50 | 0.00 | 10.50 | 0.688 | 0.000 | 0.688 | 0.577 | 0.111 | 28.074 |
| STORTHOAKS | ALIDA-TILSTON | 3.657 | 20.50 | 0.00 | 20.50 | 0.750 | 0.000 | 0.750 | 0.632 | 0.118 | 13.524 |
| VIEWFIELD | FROBISHER (VOLUNTARY UNIT NO. 1) | 1.479 | 11.50 | 0.00 | 11.50 | 0.170 | 0.000 | 0.170 | 0.156 | 0.014 | 8.119 |
| | FROBISHER (NON-UNIT) | 5.875 | 12.70 | 0.00 | 12.70 | 0.746 | 0.000 | 0.746 | 0.543 | 0.203 | 32.016 |
| WARMLEY | ALIDA (FLETWODE ALIDA VOL UNIT) | 0.773 | 31.00 | 0.00 | 31.00 | 0.240 | 0.000 | 0.240 | 0.136 | 0.104 | 5.752 |
| WAUCHOPE | ALIDA-TILSTON | 1.899 | 11.50 | 0.00 | 11.50 | 0.218 | 0.000 | 0.218 | 0.090 | 0.128 | 34.534 |
| WHITE BEAR | TILSTON | 3.403 | 42.80 | 0.00 | 42.80 | 1.456 | 0.000 | 1.456 | 0.964 | 0.492 | 44.521 |
| WHITE BEAR | TILSTON-SOURIS VALLEY | 0.317 | 25.00 | 0.00 | 25.00 | 0.079 | 0.000 | 0.079 | 0.078 | 0.001 | 1.160 |
| WILDWOOD | ALIDA | 1.062 | 14.00 | 0.00 | 14.00 | 0.149 | 0.000 | 0.149 | 0.128 | 0.021 | 3.800 |
| WILLMAR | FROBISHER-ALIDA (VOL UNIT NO. 1) | 3.554 | 17.00 | 14.70 | 31.70 | 0.604 | 0.522 | 1.126 | 0.913 | 0.213 | 25.568 |
| | FROBISHER-ALIDA (N CENTRAL VOL UNIT) | 1.226 | 14.00 | 4.50 | 18.50 | 0.172 | 0.055 | 0.227 | 0.214 | 0.013 | 3.848 |
| | FROBISHER-ALIDA (N DALES UNIT NO. 1) | 1.149 | 35.00 | 13.00 | 48.00 | 0.402 | 0.149 | 0.551 | 0.508 | 0.043 | 6.666 |
| | FROBISHER-ALIDA (KISBEY SD VOL UNIT) | 0.254 | 48.00 | 0.00 | 48.00 | 0.122 | 0.000 | 0.122 | 0.118 | 0.004 | 1.517 |
| | FROBISHER-ALIDA (NON-UNIT) | 11.063 | 33.50 | 0.50 | 34.00 | 3.713 | 0.055 | 3.768 | 2.851 | 0.917 | 79.477 |
| WINMORE | FROBISHER | 0.500 | 8.00 | 0.00 | 8.00 | 0.040 | 0.000 | 0.040 | 0.031 | 0.009 | 2.457 |

# OIL RESERVOIR DATA

| OIL IN PLACE $m^3/m^3$ | DEVELOPED AREA HECTARES | NET PAY METRES | AVERAGE POROSITY —PER CENT— | AVERAGE CONNATE WATER | FORMATION VOLUME FACTOR | OIL DENSITY $KG/M^3$ | PRODUCING DEPTH METRES | SYSTEM | DISCOVERY YEAR | POOL | PRODUCING HORIZON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.087 | 1182 | 9.10 | 18.9 | 31.2 | 1.333 | 839 | 1066 | MISSISSIPPIAN | 1956 | NOTTINGHAM | ALIDA (NORTH ALIDA BEDS UNIT) |
| 0.060 | 660 | 6.50 | 15.5 | 31.2 | 1.333 | 848 | – | MISSISSIPPIAN | – | | ALIDA (NON-UNIT) |
| 0.049 | 243 | 5.60 | 10.9 | 40.0 | 1.333 | 841 | 1196 | MISSISSIPPIAN | 1955 | OAKLEY | FROBISHER |
| 0.040 | 648 | 5.00 | 8.9 | 50.0 | 1.111 | 871 | 1188 | MISSISSIPPIAN | 1964 | PARKMAN | SOURIS VALLEY |
| 0.069 | 243 | 10.60 | 12.7 | 40.0 | 1.111 | 870 | 1060 | MISSISSIPPIAN | 1958 | PARKMAN | TILSTON |
| 0.058 | 3451 | 16.10 | 10.8 | 40.0 | 1.111 | 862 | 1097 | MISSISSIPPIAN | 1959 | PARKMAN | TILSTON-SOURIS VALLEY |
| 0.082 | 178 | 12.70 | 15.1 | 40.0 | 1.111 | 841 | 1096 | MISSISSIPPIAN | 1969 | PARKMAN SOUTH | TILSTON-SOURIS VALLEY |
| 0.040 | 907 | 4.60 | 9.6 | 45.0 | 1.333 | 848 | 1631 | MISSISSIPPIAN | 1957 | PINTO | FROBISHER |
| 0.045 | 2525 | 4.40 | 12.9 | 45.0 | 1.567 | 873 | 1615 | MISSISSIPPIAN | 1957 | PINTO | MIDALE (SOUTH PINTO UNIT) |
| 0.063 | 3143 | 4.90 | 12.9 | 35.0 | 1.333 | 834 | – | MISSISSIPPIAN | – | | MIDALE (NON-UNIT) |
| 0.044 | 437 | 10.70 | 8.0 | 35.0 | 1.176 | 843 | 1173 | MISSISSIPPIAN | 1956 | QUEENSDALE EAST | FROBISHER-ALIDA (NORTH CANTAL UNIT) |
| 0.073 | 2430 | 8.00 | 13.2 | 35.0 | 1.176 | 850 | – | MISSISSIPPIAN | – | | FROBISHER-ALIDA (NON-UNIT) |
| 0.079 | 308 | 7.30 | 16.1 | 35.0 | 1.333 | 851 | 1174 | MISSISSIPPIAN | 1959 | QUEENSDALE NORTH | ALIDA |
| 0.055 | 470 | 10.00 | 11.2 | 35.0 | 1.333 | 859 | 1204 | MISSISSIPPIAN | 1956 | QUEENSDALE WEST | ALIDA |
| 0.102 | 308 | 8.70 | 21.0 | 35.0 | 1.333 | 843 | 715 | MISSISSIPPIAN | 1957 | ROCANVILLE | BAKKEN SAND |
| 0.102 | 227 | 4.50 | 14.4 | 25.0 | 1.064 | 823 | 1822 | MISSISSIPPIAN | 1958 | RONCOTT | BAKKEN SAND |
| 0.066 | 971 | 13.70 | 12.5 | 30.0 | 1.333 | 828 | 1067 | MISSISSIPPIAN | 1955 | ROSEBANK | FROBISHER-ALIDA (VOL UNIT NO. 1) |
| 0.067 | 940 | 15.00 | 14.2 | 37.5 | 1.316 | 841 | – | MISSISSIPPIAN | – | | ALIDA (NON-UNIT) |
| 0.053 | 358 | 7.20 | 10.4 | 35.0 | 1.266 | 864 | 1074 | MISSISSIPPIAN | 1954 | ROSEBANK SOUTH | ALIDA |
| 0.092 | 421 | 11.20 | 16.5 | 35.0 | 1.163 | 880 | 1240 | MISSISSIPPIAN | 1963 | SHERWOOD | FROBISHER |
| 0.027 | 162 | 15.40 | 5.9 | 40.0 | 1.333 | 854 | 1204 | MISSISSIPPIAN | 1956 | SILVERTON | FROBISHER |
| 0.097 | 907 | 4.30 | 19.5 | 45.0 | 1.111 | 864 | 1723 | MISSISSIPPIAN | 1969 | SKINNER LAKE | RATCLIFFE |
| 0.065 | 648 | 6.10 | 13.3 | 35.0 | 1.333 | 861 | 1334 | MISSISSIPPIAN | 1965 | SOURIS FLAT | FROBISHER |
| 0.069 | 324 | 7.10 | 12.7 | 40.0 | 1.111 | 859 | 1143 | MISSISSIPPIAN | 1961 | SOUTH FLETWODE | TILSTON |
| 0.073 | 680 | 8.80 | 13.9 | 35.0 | 1.235 | 862 | 1162 | MISSISSIPPIAN | 1960 | STAR VALLEY | FROBISHER-ALIDA |
| 0.042 | 363 | 5.90 | 9.2 | 35.0 | 1.408 | 833 | 1409 | MISSISSIPPIAN | 1954 | STEELMAN | FROBISHER (VOL UNIT NO. 1) |
| 0.049 | 227 | 7.60 | 10.1 | 35.0 | 1.333 | 848 | – | MISSISSIPPIAN | – | | FROBISHER (DOUGLASTON UNIT) |
| 0.049 | 2786 | 6.70 | 10.1 | 35.0 | 1.333 | 849 | – | MISSISSIPPIAN | – | | FROBISHER (NON-UNIT) |
| 0.080 | 5463 | 4.20 | 17.1 | 35.0 | 1.389 | 843 | 1399 | MISSISSIPPIAN | 1954 | STEELMAN | MIDALE (UNIT IA) |
| 0.085 | 2072 | 9.50 | 16.5 | 28.8 | 1.389 | 858 | – | MISSISSIPPIAN | – | | MIDALE (UNIT II) |
| 0.088 | 2618 | 4.60 | 18.9 | 35.0 | 1.389 | 827 | – | MISSISSIPPIAN | – | | MIDALE (UNIT III) |
| 0.077 | 5308 | 3.30 | 16.4 | 35.0 | 1.389 | 824 | – | MISSISSIPPIAN | – | | MIDALE (UNIT IV) |
| 0.070 | 2849 | 3.30 | 14.9 | 35.0 | 1.389 | 837 | – | MISSISSIPPIAN | – | | MIDALE (UNIT V) |
| 0.073 | 6685 | 5.10 | 15.5 | 35.0 | 1.389 | 843 | – | MISSISSIPPIAN | – | | MIDALE (UNIT VI) |
| 0.084 | 713 | 4.20 | 17.9 | 35.0 | 1.389 | 870 | – | MISSISSIPPIAN | – | | MIDALE (UNIT VII) |
| 0.059 | 826 | 4.00 | 12.8 | 35.0 | 1.389 | – | – | MISSISSIPPIAN | – | | MIDALE (DOUGLASTON UNIT) |
| 0.092 | 437 | 2.30 | 18.6 | 31.2 | 1.389 | 862 | – | MISSISSIPPIAN | – | | MIDALE (LAMPMAN UNIT) |
| 0.049 | 971 | 4.10 | 10.0 | 32.0 | 1.389 | – | – | MISSISSIPPIAN | – | | MIDALE (NORTH VOL UNIT NO. 1) |
| 0.056 | 551 | 6.10 | 12.3 | 37.0 | 1.389 | – | – | MISSISSIPPIAN | – | | MIDALE (NORTH VOL UNIT NO. 2) |
| 0.049 | 3029 | 4.40 | 10.5 | 35.0 | 1.389 | 846 | – | MISSISSIPPIAN | – | | MIDALE (NON-UNIT) |
| 0.083 | 697 | 6.30 | 14.4 | 35.0 | 1.124 | 842 | 1086 | MISSISSIPPIAN | 1962 | STORTHOAKS | ALIDA-TILSTON |
| 0.087 | 129 | 17.10 | 12.0 | 35.0 | 1.163 | 873 | 1270 | MISSISSIPPIAN | 1969 | VIEWFIELD | FROBISHER (VOLUNTARY UNIT NO. 1) |
| 0.062 | 356 | 26.60 | 11.1 | 35.0 | 1.163 | 838 | – | MISSISSIPPIAN | – | | FROBISHER (NON-UNIT) |
| 0.080 | 401 | 3.20 | 11.4 | 40.0 | 1.136 | 860 | 1242 | MISSISSIPPIAN | 1966 | WARMLEY | ALIDA (FLETWODE ALIDA VOL UNIT) |
| 0.105 | 275 | 6.60 | 19.6 | 40.0 | 1.124 | 852 | 1140 | MISSISSIPPIAN | 1960 | WAUCHOPE | ALIDA-TILSTON |
| 0.069 | 373 | 13.30 | 12.7 | 40.0 | 1.111 | 862 | 1080 | MISSISSIPPIAN | 1957 | WHITE BEAR | TILSTON |
| 0.060 | 97 | 5.40 | 11.2 | 40.0 | 1.111 | 853 | 1189 | MISSISSIPPIAN | 1963 | WHITE BEAR | TILSTON-SOURIS VALLEY |
| 0.070 | 178 | 8.50 | 14.4 | 35.0 | 1.333 | 852 | 1184 | MISSISSIPPIAN | 1966 | WILDWOOD | ALIDA |
| 0.074 | 809 | 5.90 | 12.9 | 26.0 | 1.282 | 843 | 1249 | MISSISSIPPIAN | 1957 | WILLMAR | FROBISHER-ALIDA (VOL UNIT NO. 1) |
| 0.060 | 324 | 6.30 | 11.0 | 30.0 | 1.282 | 843 | – | MISSISSIPPIAN | – | | FROBISHER-ALIDA (N CENTRAL VOL UNIT) |
| 0.050 | 388 | 5.90 | 9.9 | 35.0 | 1.282 | – | – | MISSISSIPPIAN | – | | FROBISHER-ALIDA (N DALES UNIT NO. 1) |
| 0.092 | 81 | 3.40 | 20.0 | 40.0 | 1.298 | – | – | MISSISSIPPIAN | – | | FROBISHER-ALIDA (KISBEY SD VOL UNIT) |
| 0.070 | 2314 | 6.60 | 12.9 | 30.0 | 1.282 | 861 | – | MISSISSIPPIAN | – | | FROBISHER-ALIDA (NON-UNIT) |
| 0.045 | 259 | 4.30 | 9.5 | 45.0 | 1.163 | 869 | 1140 | MISSISSIPPIAN | 1968 | WINMORE | FROBISHER |

# OIL RESERVES

| POOL | PRODUCING HORIZON | INITIAL OIL IN PLACE MILLION CUBIC METRES | ESTIMATED RECOVERY | | | INITIAL RESERVES | | | CUMULATIVE PROD. DEC 31/86 | REMAINING RESERVES | 1986 PROD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | PRIMARY | ENHANCED | TOTAL | PRIMARY | ENHANCED | TOTAL | | | |
| | | | ----------PER CENT---------- | | | ----------MILLION CUBIC METRES---------- | | | | | 1000 $m^3$ |
| WORKMAN | FROBISHER (VOLUNTARY UNIT NO. 1) | 5.014 | 16.70 | 19.80 | 36.50 | 0.837 | 0.993 | 1.830 | 1.657 | 0.173 | 23.473 |
| | FROBISHER (NON-UNIT) | 6.100 | 28.00 | 0.00 | 28.00 | 1.708 | 0.000 | 1.708 | 1.102 | 0.606 | 54.677 |
| WORKMAN | MIDALE (VOLUNTARY UNIT NO. 1) | 1.031 | 17.80 | 7.00 | 24.80 | 0.184 | 0.072 | 0.256 | 0.247 | 0.009 | 1.824 |
| | MIDALE (VOLUNTARY UNIT NO. 2) | 0.831 | 10.60 | 10.80 | 21.40 | 0.088 | 0.090 | 0.178 | 0.160 | 0.018 | 1.755 |
| | MIDALE (NON-UNIT) | 1.145 | 11.00 | 2.00 | 13.00 | 0.126 | 0.023 | 0.149 | 0.144 | 0.005 | 2.178 |
| MISCELLANEOUS | ALIDA | 4.267 | 7.40 | 0.00 | 7.40 | 0.316 | 0.000 | 0.316 | 0.109 | 0.207 | 30.778 |
| | BAKKEN | 1.443 | 20.50 | 0.00 | 20.50 | 0.296 | 0.000 | 0.296 | 0.079 | 0.217 | 19.175 |
| | BIRDBEAR | 0.066 | 10.50 | 0.00 | 10.50 | 0.007 | 0.000 | 0.007 | 0.004 | 0.003 | 0.559 |
| | FROBISHER | 20.751 | 6.50 | 0.00 | 6.50 | 1.349 | 0.000 | 1.349 | 0.536 | 0.813 | 140.039 |
| | FROBISHER-ALIDA | 4.638 | 11.00 | 0.00 | 11.00 | 0.510 | 0.000 | 0.510 | 0.380 | 0.130 | 27.815 |
| | LOWER WATROUS | 0.152 | 14.50 | 0.00 | 14.50 | 0.022 | 0.000 | 0.022 | 0.019 | 0.003 | 0.576 |
| | MIDALE | 6.063 | 5.50 | 0.00 | 5.50 | 0.333 | 0.000 | 0.333 | 0.163 | 0.170 | 37.870 |
| | RATCLIFFE | 1.133 | 7.50 | 0.00 | 7.50 | 0.085 | 0.000 | 0.085 | 0.056 | 0.029 | 5.419 |
| | RED RIVER | 0.486 | 12.50 | 0.00 | 12.50 | 0.061 | 0.000 | 0.061 | 0.050 | 0.011 | 0.712 |
| | SOURIS VALLEY | 2.914 | 2.50 | 0.00 | 2.50 | 0.073 | 0.000 | 0.073 | 0.039 | 0.034 | 9.469 |
| | TILSTON | 5.975 | 5.60 | 0.00 | 5.60 | 0.335 | 0.000 | 0.335 | 0.118 | 0.217 | 24.524 |
| | TILSTON-SOURIS VALLEY | 0.180 | 4.50 | 0.00 | 4.50 | 0.008 | 0.000 | 0.008 | 0.008 | 0.000 | 0.127 |
| | WINNIPEGOSIS | 1.508 | 28.00 | 0.00 | 28.00 | 0.422 | 0.000 | 0.422 | 0.021 | 0.401 | 15.718 |
| | YEOMENS | 0.208 | 11.00 | 0.00 | 11.00 | 0.023 | 0.000 | 0.023 | 0.020 | 0.003 | 0.610 |
| | **TOTAL AREA IV LIGHT** | **534.154** | | | | **97.731** | **35.358** | **133.089** | **105.670** | **27.419** | **2841.653** |
| | **PROVINCIAL TOTAL** | **3304.890** | | | | **282.128** | **163.981** | **446.109** | **334.380** | **111.729** | **11668.390** |

# OIL RESERVOIR DATA

| OIL IN PLACE $m^3/m^3$ | DEVELOPED AREA HECTARES | NET PAY METRES | AVERAGE POROSITY ---PER CENT--- | AVERAGE CONNATE WATER ---PER CENT--- | FORMATION VOLUME FACTOR | OIL DENSITY KG/$M^3$ | PRODUCING DEPTH METRES | SYSTEM | DISCOVERY YEAR | POOL | PRODUCING HORIZON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.064 | 1748 | 4.50 | 13.1 | 42.1 | 1.190 | 844 | 1237 | MISSISSIPPIAN | 1959 | WORKMAN | FROBISHER (VOLUNTARY UNIT NO. 1) |
| 0.051 | 2460 | 4.90 | 10.4 | 42.1 | 1.190 | 861 | – | MISSISSIPPIAN | – | | FROBISHER (NON-UNIT) |
| 0.081 | 671 | 1.90 | 14.8 | 35.0 | 1.190 | 838 | 1230 | MISSISSIPPIAN | 1960 | WORKMAN | MIDALE (VOLUNTARY UNIT NO. 1) |
| 0.075 | 356 | 3.10 | 15.7 | 39.3 | 1.266 | – | – | MISSISSIPPIAN | – | | MIDALE (VOLUNTARY UNIT NO. 2) |
| 0.076 | 486 | 3.10 | 14.8 | 35.0 | 1.266 | 844 | – | MISSISSIPPIAN | – | | MIDALE (NON-UNIT) |
| 0.066 | 1149 | 5.60 | 13.6 | 35.0 | 1.333 | 843 | – | MISSISSIPPIAN | – | MISCELLANEOUS | ALIDA |
| 0.103 | 425 | 3.30 | 14.8 | 25.0 | 1.064 | 819 | – | MISSISSIPPIAN | – | | BAKKEN |
| 0.063 | 32 | 2.50 | 13.0 | 25.0 | 1.176 | 838 | – | DEVONIAN | – | | BIRDBEAR |
| 0.052 | 5147 | 7.80 | 10.6 | 35.0 | 1.333 | 843 | – | MISSISSIPPIAN | – | | FROBISHER |
| 0.059 | 1068 | 7.30 | 12.2 | 35.0 | 1.333 | 858 | – | MISSISSIPPIAN | – | | FROBISHER-ALIDA |
| 0.062 | 81 | 2.30 | 16.5 | 45.0 | 1.111 | – | – | MISSISSIPPIAN | – | | LOWER WATROUS |
| 0.053 | 1521 | 7.50 | 10.9 | 35.0 | 1.333 | 838 | – | MISSISSIPPIAN | – | | MIDALE |
| 0.053 | 282 | 7.30 | 10.9 | 35.0 | 1.333 | – | – | MISSISSIPPIAN | – | | RATCLIFFE |
| 0.053 | 81 | 11.30 | 10.9 | 35.0 | 1.333 | 853 | – | ORDOVICIAN | – | | RED RIVER |
| 0.049 | 550 | 10.80 | 10.9 | 50.0 | 1.111 | 858 | – | MISSISSIPPIAN | – | | SOURIS VALLEY |
| 0.074 | 939 | 8.60 | 13.7 | 40.0 | 1.111 | 849 | – | MISSISSIPPIAN | – | | TILSTON |
| 0.036 | 64 | 7.90 | 7.9 | 50.0 | 1.111 | 843 | – | MISSISSIPPIAN | – | | TILSTON-SOURIS VALLEY |
| 0.078 | 46 | 42.00 | 13.2 | 19.0 | 1.370 | – | – | DEVONIAN | – | | WINNIPEGOSIS |
| 0.045 | 32 | 14.33 | 9.3 | 35.0 | 1.333 | – | – | ORDOVICIAN | – | | YEOMENS |

# RESERVOIR DATA RESERVES AND PRODUCTION—GAS

# FIVE YEAR GAS SUMMARY

| | 1982 | 1983 | 1984 | 1985 | 1986 |
|---|---|---|---|---|---|
| INITIAL ESTABLISHED RESERVES (Million Cubic Metres) | | | | | |
| Non-Associated | 66 701.8 | 73 224.3 | 84 415.1 | 90 679.9 | 96 103.9 |
| Associated | 1 633.3 | 1 683.5 | 1 683.5 | 1 822.6 | 1 949.0 |
| Dissolved | 5 756.5 | 5 756.5 | 5 972.5 | 6 535.2 | 7 561.5 |
| PROVINCIAL TOTAL | 74 091.6 | 80 664.3 | 92 071.1 | 99 037.7 | 105 614.4 |
| REMAINING ESTABLISHED RESERVES (Million Cubic Metres) | | | | | |
| Non-Associated | 41 289.0 | 46 661.8 | 56 407.4 | 61 008.5 | 64 434.6 |
| Associated | 790.0 | 838.9 | 837.4 | 942.9 | 1 039.0 |
| Dissolved | 1 054.5 | 966.5 | 994.2 | 1 316.1 | 2 078.2 |
| PROVINCIAL TOTAL | 43 133.5 | 48 467.2 | 58 239.0 | 63 267.5 | 67 551.8 |
| YEARLY PRODUCTION (Million Cubic Metres) | | | | | |
| Non-Associated | 1 251.8 | 1 138.1 | 1 445.2 | 1 639.7 | 1 998.6 |
| Associated | 1.4 | 1.4 | 3.9 | 23.5 | 30.2 |
| Dissolved | 48.8 | 88.0 | 188.3 | 240.8 | 264.2 |
| PROVINCIAL TOTAL | 1 302.0 | 1 227.5 | 1 637.4 | 1 904.0 | 2 293.0 |
| NUMBER OF PRODUCING WELLS | | | | | |
| Non-Associated | 769 | 919 | 1 040 | 1 545 | 2 070 |
| Associated | 6 | 7 | 7 | 15 | 15 |
| PROVINCIAL TOTAL | 775 | 926 | 1 047 | 1 560 | 2 085 |
| AVERAGE DAILY PRODUCTION (Million Cubic Metres Per Day) | | | | | |
| Non-Associated | 4.660 | 5.932 | 7.705 | 8.981 | 9.492 |
| Associated | 0.006 | 0.005 | 0.047 | 0.092 | 0.084 |
| Dissolved | 0.133 | 0.241 | 0.516 | 0.659 | 0.724 |
| PROVINCIAL TOTAL | 4.799 | 6.178 | 8.268 | 9.732 | 10.300 |

# NATURAL GAS RESERVES

| POOL | PRODUCING HORIZON | INITIAL GAS IN PLACE MILLION CUBIC METRES | RESERVOIR RECOVERY PER CENT | SURFACE LOSSES PER CENT | INITIAL ESTABLISHED RESERVES | CUMULATIVE PRODUCTION DEC 31/86 | REMAINING RESERVES DEC 31/86 | ESTIMATED HEATING VALUE MAJ/m$^3$ |
|---|---|---|---|---|---|---|---|---|
| | | | | | ———MILLION CUBIC METRES——— | | | |
| **NON-ASSOCIATED GAS RESERVES** | | | | | | | | |
| BAYHURST | VIKING (VOLUNTARY UNIT) | 2567.7 | 80 | 5 | 1951.4 | 1862.4 | 89.0 | 37.4 |
| BAYHURST WEST | VIKING (VOLUNTARY UNIT) | 304.7 | 75 | 5 | 217.1 | 185.7 | 31.4 | 35.6 |
| BEACON HILL | MANNVILLE | 4541.7 | 85 | 5 | 3667.4 | 1590.9 | 2076.5 | 35.6 |
| BEACON HILL WEST | MANNVILLE SAND | 1726.9 | 80 | 5 | 1312.4 | 89.7 | 1222.7 | 35.9 |
| BEVERLEY EAST | CANTUAR SAND (VOL UNIT NO. 1) | 378.0 | 90 | 5 | 323.2 | 230.4 | 92.8 | 36.9 |
| BIGSTICK | SECOND WHITE SPECKS | 11093.0 | 65 | 5 | 6850.0 | 505.5 | 6344.5 | 35.6 |
| BROCK | VIKING UNIT | 765.2 | 78 | 5 | 567.0 | 561.7 | 5.3 | 36.3 |
| BROCK EAST | VIKING SAND | 310.0 | 35 | 5 | 103.1 | 10.7 | 92.4 | 34.6 |
| BURSTALL | MEDICINE HAT SAND | 450.1 | 80 | 5 | 342.1 | 4.0 | 434.0 | 35.4 |
| | MILK RIVER | 235.1 | 65 | 5 | 145.2 | 4.2 | | 35.4 |
| | MILK RIVER-MEDICINE HAT | | | | | 45.1 | | 35.4 |
| BURSTALL NORTH | VIKING SAND | 231.9 | 80 | 5 | 176.3 | 23.4 | 152.9 | 35.6 |
| CAVALIER | SPINNEY HILL SAND | 120.0 | 80 | 5 | 92.1 | 84.8 | 7.3 | 32.4 |
| COLEVILLE-SMILEY | VIKING (UNIT) | 6978.7 | 85 | 5 | 5635.3 | 4979.8 | 655.5 | 38.4 |
| | VIKING (NON-UNIT) | 56.4 | 80 | 5 | 44.4 | 32.6 | 11.8 | 38.3 |
| DODSLAND NORTH | VIKING SAND (UNIT) | 843.4 | 80 | 5 | 640.7 | 459.6 | 181.1 | 40.7 |
| | VIKING SAND (NON-UNIT) | 2163.0 | 65 | 5 | 1335.7 | 87.7 | 1248.0 | 40.7 |
| FORT PITT | MANNVILLE SAND | 1187.7 | 80 | 5 | 902.7 | 59.8 | 842.9 | 35.9 |
| FORT PITT NORTH | MANNVILLE SAND | 350.0 | 80 | 5 | 266.0 | 111.6 | 154.4 | 37.0 |
| GLIDDEN | VIKING SAND (VOL UNIT NO. 1) | 484.0 | 50 | 5 | 229.9 | 84.8 | 145.1 | 35.8 |
| GREENAN | VIKING SAND | 1347.9 | 30 | 5 | 384.2 | 313.0 | 71.2 | 35.2 |
| GULL LAKE | CANTUAR SAND | 999.9 | 70 | 5 | 664.9 | 482.5 | 182.4 | 38.4 |
| HATTON | MEDICINE HAT SAND (UNIT) | 6871.3 | 80 | 5 | 5222.2 | 4061.3 | 1160.9 | 35.4 |
| | MEDICINE HAT SAND (AGREEMENT AREA) | 1969.2 | 80 | 5 | 1496.6 | 705.4 | 791.2 | 35.4 |
| | MEDICINE HAT SAND (NON-UNIT) | 10391.6 | 80 | 5 | 7897.6 | 1834.8 | 26407.4 | 35.4 |
| | MILK RIVER | 42778.3 | 65 | 5 | 26013.7 | 4075.5 | | 35.4 |
| | MILK RIVER - MEDICINE HAT | | | | | 1583.6 | | 35.4 |
| HOOSIER | VIKING SAND (UNIT) | 4643.4 | 60 | 5 | 2646.7 | 2380.9 | 265.8 | 37.3 |
| | VIKING SAND (NON-UNIT) | 35.1 | 60 | 5 | 20.0 | 20.0 | 0.0 | 37.3 |
| LIEBENTHAL | MILK RIVER | 418.9 | 65 | 5 | 258.7 | 155.2 | 103.5 | 35.4 |
| LLOYDMINSTER | COLONY SAND | 246.2 | 95 | 5 | 222.2 | 221.2 | 1.0 | 34.4 |
| MARENGO | VIKING SAND | 323.7 | 80 | 5 | 246.0 | 0.6 | 245.4 | 36.3 |
| MILTON | VIKING SAND | 1047.2 | 85 | 5 | 845.6 | 800.9 | 44.7 | 37.3 |
| PIERCELAND | MANNVILLE SAND | 1581.1 | 93 | 5 | 1396.9 | 592.8 | 804.1 | 36.5 |
| SENATE | SECOND WHITE SPECKS | 215.8 | 70 | 5 | 143.5 | 0.1 | 143.4 | 35.6 |
| TANGLEFLAGS | COLONY SAND | 625.0 | 75 | 5 | 445.3 | 287.2 | 158.1 | 35.9 |
| | MCLAREN SAND | 519.3 | 75 | 5 | 370.0 | 181.4 | 188.6 | 35.6 |
| | SECOND WHITE SPECKS | 112.5 | 75 | 5 | 80.2 | 17.0 | 63.2 | 36.1 |
| | ST.WALBURG SAND | 123.5 | 75 | 5 | 88.0 | 19.6 | 68.4 | 35.8 |
| TOTNES | VIKING SAND (VOLUNTARY UNIT) | 465.6 | 80 | 5 | 354.0 | 293.7 | 60.3 | 35.5 |
| | VIKING SAND (NON-UNIT) | 155.2 | 80 | 5 | 118.0 | 1.6 | 116.4 | 35.5 |
| UNITY FIELD | SPARKY SAND | 72.0 | 73 | 5 | 50.0 | 6.1 | 43.9 | 35.2 |
| | UNITY SAND | 312.2 | 90 | 5 | 267.0 | 267.0 | 0.0 | 33.6 |
| | VIKING SAND | 74.0 | 65 | 5 | 45.7 | 16.1 | 29.6 | 37.4 |
| WHITESIDE | RIBSTONE CREEK SAND (VOL UNIT) | 608.3 | 85 | 5 | 491.2 | 426.1 | 65.1 | 37.4 |
| WHITESIDE WEST | RIBSTONE CREEK SAND | 83.3 | 80 | 5 | 63.3 | 24.5 | 38.8 | 36.0 |
| | VIKING SAND | 872.4 | 50 | 5 | 414.4 | 28.2 | 386.2 | 39.1 |
| MISCELLANEOUS | ALIDA | 48.9 | | | 39.5 | 4.8 | 34.7 | 39.9 |
| | BAKKEN | 3173.7 | | | 2319.6 | 435.8 | 1883.8 | 37.8 |
| | CANTUAR | 224.4 | | | 116.0 | 58.0 | 58.0 | 35.2 |
| | COLONY | 5896.7 | | | 4406.9 | 418.2 | 3988.7 | 34.4 |
| | CUMMINGS | 6.3 | | | 4.8 | 4.8 | 0.0 | 36.6 |

# NATURAL GAS RESERVOIR DATA

| 1986 PRODUCTION YEARLY TOTAL MILLION $m^3$ | DAILY AVERAGE MILLION $m^3$/DAY | DEVELOPED AREA HECTARES | NET PAY METRES | AVERAGE POROSITY ---PER | AVERAGE CONNATE WATER CENT--- | SPECIFIC GRAVITY | PRODUCING DEPTH METRES | SYSTEM | DISCOVERY YEAR | POOL | PRODUCING HORIZON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | **NON-ASSOCIATED GAS RESERVES** | |
| 3.915 | 0.335 | 8903 | 2.71 | 25.0 | 35.0 | 0.580 | 661 | CRETACEOUS | 1958 | BAYHURST | VIKING (VOLUNTARY UNIT) |
| 4.748 | 0.022 | 1333 | 1.62 | 30.5 | 35.0 | 0.580 | 696 | CRETACEOUS | 1968 | BAYHURST WEST | VIKING (VOLUNTARY UNIT) |
| 3.057 | 0.256 | 21107 | 4.66 | 35.0 | 40.0 | 0.568 | 274 | CRETACEOUS | 1963 | BEACON HILL | MANNVILLE |
| 49.083 | 0.235 | 2849 | 5.44 | 35.0 | 40.0 | 0.573 | 310 | CRETACEOUS | 1978 | BEACON HILL WEST | MANNVILLE SAND |
| 12.692 | 0.035 | 674 | 2.53 | 28.1 | 33.0 | 0.583 | 972 | CRETACEOUS | 1965 | BEVERLEY EAST | CANTUAR SAND (VOL UNIT NO. 1) |
| 217.636 | 0.991 | 35849 | 3.34 | 20.4 | 30.0 | 0.580 | 692 | CRETACEOUS | 1980 | BIGSTICK | SECOND WHITE SPECKS |
| 3.556 | 0.017 | 5698 | 2.19 | 14.5 | 40.0 | 0.588 | 716 | CRETACEOUS | 1951 | BROCK | VIKING UNIT |
| 0.000 | 0.000 | 3108 | 0.91 | 24.0 | 40.0 | 0.597 | 720 | CRETACEOUS | 1967 | BROCK EAST | VIKING SAND |
| 2.175 | 0.017 | 2719 | 2.80 | 16.0 | 20.0 | 0.575 | 520 | CRETACEOUS | 1952 | BURSTALL | MEDICINE HAT SAND |
| 1.578 | 0.007 | 2719 | 2.61 | 16.0 | 45.0 | 0.574 | 460 | CRETACEOUS | 1952 | | MILK RIVER |
| 23.098 | 0.111 | | | | | | | CRETACEOUS | 1952 | | MILK RIVER-MEDICINE HAT |
| 14.379 | 0.100 | 1011 | 1.90 | 26.0 | 45.0 | 0.580 | 748 | CRETACEOUS | 1973 | BURSTALL NORTH | VIKING SAND |
| 7.883 | 0.056 | 1518 | 1.22 | 25.0 | 30.0 | 0.620 | 400 | CRETACEOUS | 1972 | CAVALIER | SPINNEY HILL SAND |
| 63.459 | 0.197 | 20979 | 3.05 | 22.5 | 32.0 | 0.600 | 686 | CRETACEOUS | 1951 | COLEVILLE-SMILEY | VIKING (UNIT) |
| 0.631 | 0.008 | 228 | 2.44 | 25.5 | 32.0 | 0.608 | 686 | CRETACEOUS | 1951 | | VIKING (NON-UNIT) |
| 15.960 | 0.058 | 4452 | 2.01 | 22.4 | 35.0 | 0.615 | 669 | CRETACEOUS | 1953 | DODSLAND NORTH | VIKING SAND (UNIT) |
| 14.683 | 0.056 | 12756 | 1.80 | 22.4 | 35.0 | 0.621 | 669 | CRETACEOUS | 1953 | | VIKING SAND (NON-UNIT) |
| 18.999 | 0.079 | 4880 | 4.17 | 34.0 | 40.0 | 0.578 | 388 | CRETACEOUS | 1972 | FORT PITT | MANNVILLE SAND |
| 33.253 | 0.163 | 1330 | 4.61 | 31.0 | 35.0 | 0.568 | 473 | CRETACEOUS | 1971 | FORT PITT NORTH | MANNVILLE SAND |
| 5.327 | 0.030 | 5693 | 0.88 | 21.0 | 40.0 | 0.584 | 694 | CRETACEOUS | 1953 | GLIDDEN | VIKING SAND (VOL UNIT NO. 1) |
| 7.258 | 0.029 | 5952 | 1.98 | 24.8 | 35.0 | 0.596 | 655 | CRETACEOUS | 1969 | GREENAN | VIKING SAND |
| 1.146 | 0.003 | 2011 | 3.14 | 23.0 | 30.0 | 0.598 | 1057 | CRETACEOUS | 1957 | GULL LAKE | CANTUAR SAND |
| 46.764 | 0.128 | 43491 | 3.26 | 21.0 | 50.0 | 0.575 | 477 | CRETACEOUS | 1953 | HATTON | MEDICINE HAT SAND (UNIT) |
| 21.463 | 0.058 | 13727 | 2.96 | 21.0 | 50.0 | 0.575 | 477 | CRETACEOUS | 1953 | | MEDICINE HAT SAND (AGREEMENT AREA) |
| 73.356 | 0.386 | 89754 | 2.74 | 18.3 | 50.0 | 0.575 | 477 | CRETACEOUS | 1953 | | MEDICINE HAT SAND (NON-UNIT) |
| 554.734 | 2.528 | 185194 | 7.21 | 16.0 | 45.0 | 0.574 | 335 | CRETACEOUS | 1953 | | MILK RIVER |
| 526.559 | 2.502 | | | | | | | CRETACEOUS | 1953 | | MILK RIVER - MEDICINE HAT |
| 21.755 | 0.073 | 12468 | 3.32 | 23.0 | 32.0 | 0.600 | 732 | CRETACEOUS | 1953 | HOOSIER | VIKING SAND (UNIT) |
| 0.000 | 0.000 | 129 | 3.81 | 23.0 | 32.0 | 0.600 | 732 | CRETACEOUS | 1953 | | VIKING SAND (NON-UNIT) |
| 16.639 | 0.054 | 5915 | 2.03 | 16.0 | 45.0 | 0.578 | 386 | CRETACEOUS | 1974 | LIEBENTHAL | MILK RIVER |
| 0.908 | 0.014 | 1012 | 4.16 | 25.0 | 30.0 | 0.568 | 518 | CRETACEOUS | 1935 | LLOYDMINSTER | COLONY SAND |
| 0.000 | 0.000 | 1410 | 1.89 | 25.0 | 35.0 | 0.576 | 728 | CRETACEOUS | 1954 | MARENGO | VIKING SAND |
| 6.502 | 0.021 | 4887 | 1.74 | 25.0 | 32.0 | 0.604 | 732 | CRETACEOUS | 1954 | MILTON | VIKING SAND |
| 0.000 | 0.000 | 3818 | 9.27 | 35.0 | 40.0 | 0.564 | 272 | CRETACEOUS | 1969 | PIERCELAND | MANNVILLE SAND |
| 0.086 | 0.005 | 777 | 3.06 | 23.0 | 40.0 | 0.578 | 808 | CRETACEOUS | 1971 | SENATE | SECOND WHITE SPECKS |
| 24.424 | 0.079 | 999 | 6.90 | 33.5 | 15.0 | 0.600 | 488 | CRETACEOUS | 1965 | TANGLEFLAGS | COLONY SAND |
| 16.517 | 0.052 | 1258 | 5.20 | 31.8 | 25.0 | 0.591 | 475 | CRETACEOUS | 1965 | | MCLAREN SAND |
| 9.879 | 0.030 | 1234 | 1.50 | 32.0 | 40.0 | 0.591 | 286 | CRETACEOUS | 1965 | | SECOND WHITE SPECKS |
| 8.451 | 0.031 | 713 | 2.50 | 33.0 | 40.0 | 0.581 | 315 | CRETACEOUS | 1965 | | ST.WALBURG SAND |
| 5.044 | 0.020 | 1554 | 2.71 | 25.0 | 40.0 | 0.584 | 613 | CRETACEOUS | 1969 | TOTNES | VIKING SAND (VOLUNTARY UNIT) |
| 0.000 | 0.000 | 518 | 2.71 | 25.0 | 40.0 | 0.584 | 613 | CRETACEOUS | 1969 | | VIKING SAND (NON-UNIT) |
| 6.125 | 0.041 | 518 | 2.24 | 28.0 | 55.0 | 0.590 | 606 | CRETACEOUS | 1985 | UNITY FIELD | SPARKY SAND |
| 0.000 | 0.000 | 2181 | 4.88 | 26.0 | 20.0 | 0.600 | 632 | CRETACEOUS | 1944 | | UNITY SAND |
| 1.778 | 0.030 | 777 | 1.22 | 21.6 | 35.0 | 0.600 | 503 | CRETACEOUS | 1945 | | VIKING SAND |
| 7.928 | 0.033 | 2987 | 4.11 | 35.0 | 30.0 | 0.568 | 229 | CRETACEOUS | 1982 | WHITESIDE | RIBSTONE CREEK SAND (VOL UNIT) |
| 14.831 | 0.089 | 917 | 3.65 | 26.3 | 25.0 | 0.572 | 248 | CRETACEOUS | 1984 | WHITESIDE WEST | RIBSTONE CREEK SAND |
| 4.433 | 0.020 | 3980 | 2.22 | 22.8 | 32.0 | 0.578 | 724 | CRETACEOUS | 1956 | | VIKING SAND |
| 0.000 | 0.000 | 128 | – | – | – | – | – | MISSISSIPPIAN | – | MISCELLANEOUS | ALIDA |
| 13.318 | 0.080 | 1928 | – | – | – | – | – | MISSISSIPPIAN | – | | BAKKEN |
| 0.459 | 0.002 | 682 | – | – | – | – | – | CRETACEOUS | – | | CANTUAR |
| 43.852 | 0.163 | 8033 | – | – | – | – | – | CRETACEOUS | – | | COLONY |
| 0.000 | 0.000 | 32 | – | – | – | – | – | CRETACEOUS | – | | CUMMINGS |

## NATURAL GAS RESERVES

| POOL | PRODUCING HORIZON | INITIAL GAS IN PLACE MILLION CUBIC METRES | RESERVOIR RECOVERY PER CENT | SURFACE LOSSES PER CENT | INITIAL ESTABLISHED RESERVES | CUMULATIVE PRODUCTION DEC 31/86 | REMAINING RESERVES DEC 31/86 | ESTIMATED HEATING VALUE MAJ/m$^3$ |
|---|---|---|---|---|---|---|---|---|
| | | | | | ——MILLION CUBIC | METRES—— | | |
| MISCELLANEOUS | DETRITAL | 835.3 | | | 641.8 | 0.0 | 641.8 | 36.0 |
| | LLOYDMINSTER | 111.9 | | | 82.7 | 32.5 | 50.2 | 34.4 |
| | MANNVILLE | 5569.9 | | | 4049.3 | 133.6 | 3915.7 | 37.4 |
| | MCLAREN | 1107.9 | | | 828.7 | 434.7 | 394.0 | 34.4 |
| | MEDICINE HAT | 4.7 | | | 4.7 | 0.0 | 4.7 | 35.4 |
| | MILK RIVER | 2004.3 | | | 1237.6 | 0.0 | 1237.6 | 35.9 |
| | REX | 90.3 | | | 68.3 | 7.8 | 60.5 | 34.4 |
| | RIBSTONE CREEK | 87.5 | | | 61.0 | 8.5 | 52.5 | 34.4 |
| | ROSERAY | 52.9 | | | 260.5 | 46.6 | 213.9 | 37.4 |
| | SECOND WHITE SPECKS | 3869.9 | | | 2542.8 | 1.1 | 2541.7 | 35.4 |
| | SPARKY | 141.6 | | | 101.0 | 13.7 | 87.3 | 34.4 |
| | SPINNEY HILL | 101.9 | | | 76.7 | 5.5 | 71.2 | 32.0 |
| | ST. WALBURG | 417.6 | | | 318.6 | 2.8 | 315.8 | 35.2 |
| | UPPER SHAUNAVON | 525.9 | | | 374.5 | 0.6 | 373.9 | 36.0 |
| | VIKING | 5915.0 | | | 3453.8 | 235.9 | 3217.9 | 37.4 |
| | WASECA | 94.3 | | | 67.2 | 3.7 | 63.5 | 34.2 |
| | **TOTAL NON-ASSOCIATED** | **141763.9** | | | **96103.9** | **31669.3** | **64434.6** | |
| **ASSOCIATED GAS RESERVES** | | | | | | | | |
| ABERFELDY | SPARKY SAND | 125.4 | 80 | 5 | 95.3 | 62.7 | 32.6 | 34.4 |
| ALIDA EAST | ALIDA | 833.4 | 45 | 5 | 356.3 | 160.7 | 195.6 | 45.0 |
| ALIDA WEST | ALIDA | 81.9 | 85 | 5 | 66.1 | 0.0 | 66.1 | 45.0 |
| AVON HILL | VIKING SAND | 10.6 | 80 | 5 | 8.1 | 0.0 | 8.1 | 37.4 |
| BUFFALO COULEE | BAKKEN SAND | 3.5 | 60 | 5 | 2.0 | 2.0 | 0.0 | 37.2 |
| CANTUAR EAST | CANTUAR SAND | 914.1 | 90 | 3 | 798.0 | 569.3 | 228.7 | 37.4 |
| COSINE LAKE | LLOYDMINSTER SAND | 170.9 | 66 | 5 | 106.7 | 33.1 | 73.6 | 34.4 |
| DEE VALLEY | WASECA SAND | 75.5 | 70 | 5 | 50.2 | 0.0 | 50.2 | 37.2 |
| EPPING | SPARKY SAND | 9.8 | 80 | 5 | 7.4 | 2.6 | 4.8 | 34.4 |
| EUREKA | VIKING SAND | 12.5 | 80 | 5 | 9.5 | 8.4 | 1.1 | 40.7 |
| HOOSIER | BAKKEN SAND | 63.1 | 90 | 5 | 53.9 | 12.1 | 41.8 | 37.9 |
| LASHBURN | WASECA SAND | 11.3 | 80 | 5 | 8.6 | 3.1 | 5.5 | 34.4 |
| LONE ROCK | SPARKY SAND | 2.5 | 80 | 5 | 1.9 | 0.2 | 1.7 | 34.4 |
| MARSDEN SOUTH | SPARKY SAND (VOLUNTARY UNIT NO. 1) | 93.6 | 80 | 5 | 71.1 | 18.7 | 52.4 | 34.4 |
| NORTH HOOSIER | BAKKEN SAND | 11.0 | 85 | 5 | 8.9 | 4.0 | 4.9 | 37.7 |
| NOTTINGHAM | ALIDA | 211.2 | 90 | 5 | 180.6 | 0.0 | 180.6 | 45.0 |
| SENLAC | LLOYDMINSTER SAND | 214.1 | 43 | 5 | 87.7 | 10.1 | 77.6 | 34.4 |
| SILVERDALE | SPARKY SAND | 27.2 | 80 | 5 | 21.0 | 12.4 | 8.6 | 34.4 |
| SMILEY-DEWAR | VIKING SAND | 15.7 | 80 | 5 | 11.9 | 7.6 | 4.3 | 38.3 |
| TANGLEFLAGS | SPARKY SAND | 4.7 | 85 | 5 | 3.8 | 3.0 | 0.8 | 34.4 |
| | **TOTAL ASSOCIATED** | **2892.0** | | | **1949.0** | **910.0** | **1039.0** | |
| **DISSOLVED GAS RESERVES** | | | | | | | | |
| | AREA II | | | | 1754.1 | 865.2 | 888.9 | |
| | AREA III | | | | 373.0 | 354.9 | 18.1 | |
| | AREA IV | | | | 5434.4 | 4263.2 | 1171.2 | |
| | **TOTAL DISSOLVED** | | | | **7561.5** | **5483.3** | **2078.2** | |
| | **PROVINCIAL TOTALS** | **144655.9** | | | **105614.4** | **38062.6** | **67551.8** | |

# NATURAL GAS RESERVOIR DATA

| 1986 PRODUCTION YEARLY TOTAL MILLION $m^3$ | DAILY AVERAGE MILLION $m^3$/DAY | DEVELOPED AREA HECTARES | NET PAY METRES | AVERAGE POROSITY ---PER | AVERAGE CONNATE WATER CENT--- | SPECIFIC GRAVITY | PRODUCING DEPTH METRES | SYSTEM | DISCOVERY YEAR | POOL | PRODUCING HORIZON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.000 | 0.000 | 0 | – | – | – | – | – | PRE-CRETACEOUS | – | MISCELLANEOUS | DETRITAL |
| 4.578 | 0.020 | 131 | – | – | – | – | – | CRETACEOUS | – | | LLOYDMINSTER |
| 1.312 | 0.003 | 2150 | – | – | – | – | – | CRETACEOUS | – | | MANNVILLE |
| 40.529 | 0.164 | 4125 | – | – | – | – | – | CRETACEOUS | – | | MCLAREN |
| 0.000 | 0.000 | 0 | – | – | – | – | – | CRETACEOUS | – | | MEDICINE HAT |
| 0.000 | 0.000 | 259 | – | – | – | – | – | CRETACEOUS | – | | MILK RIVER |
| 1.009 | 0.007 | 294 | – | – | – | – | – | CRETACEOUS | – | | REX |
| 5.363 | 0.025 | 1554 | – | – | – | – | – | CRETACEOUS | – | | RIBSTONE CREEK |
| 0.000 | 0.000 | 1708 | – | – | – | – | – | CRETACEOUS | – | | ROSERAY |
| 0.785 | 0.004 | 3367 | – | – | – | – | – | CRETACEOUS | – | | SECOND WHITE SPECKS |
| 7.172 | 0.023 | 400 | – | – | – | – | – | CRETACEOUS | – | | SPARKY |
| 2.462 | 0.016 | 259 | – | – | – | – | – | CRETACEOUS | – | | SPINNEY HILL |
| 1.485 | 0.004 | 518 | – | – | – | – | – | CRETACEOUS | – | | ST. WALBURG |
| 0.000 | 0.000 | 0 | – | – | – | – | – | JURASSIC | – | | UPPER SHAUNAVON |
| 3.744 | 0.010 | 2067 | – | – | – | – | – | CRETACEOUS | – | | VIKING |
| 0.002 | 0.010 | 478 | – | – | – | – | – | CRETACEOUS | – | | WASECA |
| **1908.560** | **9.492** | | | | | | | | | | **TOTAL NON-ASSOCIATED** |
| | | | | | | | | | | **ASSOCIATED GAS RESERVES** | |
| 0.000 | 0.000 | 678 | 2.44 | 25.0 | 30.0 | 0.595 | 529 | CRETACEOUS | 1958 | ABERFELDY | SPARKY SAND |
| 0.000 | 0.000 | 656 | 5.79 | 18.1 | 20.0 | 0.700 | 1116 | MISSISSIPPIAN | 1954 | ALIDA EAST | ALIDA |
| 0.000 | 0.000 | 214 | 3.05 | 14.3 | 31.0 | 0.700 | 1137 | MISSISSIPPIAN | 1955 | ALIDA WEST | ALIDA |
| 0.000 | 0.000 | 40 | 2.13 | 25.0 | 30.0 | 0.600 | 678 | CRETACEOUS | 1959 | AVON HILL | VIKING SAND |
| 0.000 | 0.000 | 8 | 3.05 | 23.0 | 25.0 | 0.565 | 808 | MISSISSIPPIAN | 1953 | BUFFALO COULEE | BAKKEN SAND |
| 0.000 | 0.000 | 1127 | 8.69 | 25.6 | 41.0 | 0.599 | 960 | CRETACEOUS | 1957 | CANTUAR EAST | CANTUAR SAND |
| 11.675 | 0.032 | 483 | 2.92 | 30.0 | 35.0 | 0.600 | 770 | CRETACEOUS | 1972 | COSINE LAKE | LLOYDMINSTER SAND |
| 0.000 | 0.000 | 663 | 1.50 | 30.0 | 30.0 | 0.597 | 460 | CRETACEOUS | 1967 | DEE VALLEY | WASECA SAND |
| 0.000 | 0.000 | 65 | 2.44 | 25.0 | 20.0 | 0.609 | 610 | CRETACEOUS | 1967 | EPPING | SPARKY SAND |
| 0.239 | 0.002 | 65 | 2.01 | 22.4 | 35.0 | 0.622 | 689 | CRETACEOUS | 1954 | EUREKA | VIKING SAND |
| 0.610 | 0.002 | 142 | 2.44 | 25.0 | 36.0 | 0.576 | 852 | MISSISSIPPIAN | 1972 | HOOSIER | BAKKEN SAND |
| 0.000 | 0.000 | 129 | 4.51 | 25.0 | 30.0 | 0.582 | 498 | CRETACEOUS | 1966 | LASHBURN | WASECA SAND |
| 0.000 | 0.000 | 16 | 2.44 | 25.0 | 30.0 | 0.600 | 560 | CRETACEOUS | 1947 | LONE ROCK | SPARKY SAND |
| 7.588 | 0.021 | 518 | 2.04 | 30.0 | 35.0 | 0.600 | 625 | CRETACEOUS | 1979 | MARSDEN SOUTH | SPARKY SAND (VOLUNTARY UNIT NO. 1) |
| 0.000 | 0.000 | 83 | 1.52 | 20.0 | 25.0 | 0.600 | 831 | MISSISSIPPIAN | 1960 | NORTH HOOSIER | BAKKEN SAND |
| 0.000 | 0.000 | 354 | 6.10 | 16.7 | 34.0 | 0.700 | 1061 | MISSISSIPPIAN | 1956 | NOTTINGHAM | ALIDA |
| 10.069 | 0.027 | 1332 | 1.16 | 30.0 | 25.0 | 0.600 | 787 | CRETACEOUS | 1960 | SENLAC | LLOYDMINSTER SAND |
| 0.000 | 0.000 | 129 | 3.05 | 25.0 | 30.0 | 0.596 | 573 | CRETACEOUS | 1965 | SILVERDALE | SPARKY SAND |
| 0.000 | 0.000 | 65 | 2.29 | 25.5 | 32.0 | 0.606 | 694 | CRETACEOUS | 1973 | SMILEY-DEWAR | VIKING SAND |
| 0.000 | 0.000 | 24 | 3.05 | 25.0 | 30.0 | 0.595 | 511 | CRETACEOUS | 1969 | TANGLEFLAGS | SPARKY SAND |
| **30.181** | **0.084** | | | | | | | | | | **TOTAL ASSOCIATED** |
| | | | | | | | | | | **DISSOLVED GAS RESERVES** | |
| 140.739 | 0.386 | | | | | | | | | | AREA II |
| 0.000 | 0.000 | | | | | | | | | | AREA III |
| 123.488 | 0.338 | | | | | | | | | | AREA IV |
| **264.227** | **0.724** | | | | | | | | | | **TOTAL DISSOLVED** |
| **2202.968** | **10.300** | | | | | | | | | | **PROVINCIAL TOTALS** |

# OIL AND GAS UNITS
# AND ENHANCED
# RECOVERY PROJECTS

## OIL AND GAS UNITS – ENHANCED RECOVERY PROJECTS

| UNIT NAME | OPERATOR | PRODUCING ZONE | UNIT EFFECTIVE DATE | LATEST BOUNDARY REVISION | ENHANCED RECOVERY PROJECTS |
|---|---|---|---|---|---|
| **AREA I** | | | | | |
| ABERFELDY UNIT | HUSKY | SPARKY | 12-1-62 | 5-1-66 | WATERFLOOD (SUSPENDED)<br>IN-SITU WET COMBUSTION<br>STEAMFLOOD |
| BIG GULLY VOLUNTARY UNIT NO. 1 | HUSKY | WASECA & MCLAREN | 10-1-70 | 1-1-71 | WATERFLOOD (SUSPENDED) |
| GOLDEN LAKE VOLUNTARY UNIT | HUSKY | SPARKY & WASECA | 1-1-71 | 11-1-71 | WATERFLOOD (SUSPENDED) |
| GULLY LAKE WASECA VOLUNTARY UNIT NO. 1 | HUSKY | WASECA | 8-1-71 | – | WATERFLOOD |
| LASHBURN WASECA VOLUNTARY UNIT | HUSKY | WASECA | 4-1-68 | 6-1-71 | WATERFLOOD (SUSPENDED) |
| MARSDEN SOUTH SPARKY SAND VOLUNTARY UNIT NO. 1 | SASKOIL | SPARKY | 12-1-85 | – | WATERFLOOD |
| NORTH DULWICH SPARKY VOLUNTARY UNIT | HUSKY | SPARKY | 10-1-70 | – | WATERFLOOD |
| NORTHMINSTER SPARKY VOLUNTARY UNIT | HUSKY | SPARKY | 3-1-70 | 9-1-70 | WATERFLOOD (SUSPENDED) |
| SOUTH ABERFELDY SPARKY VOLUNTARY UNIT | HUSKY | SPARKY | 6-1-69 | 5-1-70 | WATERFLOOD |
| SOUTH EPPING UNIT NO. 1 | TEXACO | SPARKY & G.P. | 2-1-66 | 9-1-67 | WATERFLOOD |
| SOUTH WEST EPPING SPARKY VOLUNTARY UNIT NO. 1 | TEXACO | SPARKY | 1-1-72 | 7-1-73 | WATERFLOOD |
| TANGLEFLAGS VOLUNTARY UNIT NO. 2 | DOME | LLOYDMINSTER | 3-1-81 | – | WATERFLOOD |
| TANGLEFLAGS VOLUNTARY UNIT NO. 3 | MOBIL | G.P., MCLAREN & LLOYDMINSTER | 2-1-81 | – | – |
| **AREA II** | | | | | |
| AVON HILL VIKING VOLUNTARY UNIT | CAN. FUTURITY | VIKING | 8-1-85 | – | WATERFLOOD |
| BAYHURST VIKING VOLUNTARY GAS UNIT | SPC | VIKING | 11-1-66 | – | GAS STORAGE |
| BROCK VIKING SAND GAS UNIT | HUSKY | VIKING | 3-1-54 | – | – |
| COLEVILLE-SMILEY VIKING SAND GAS UNIT | ESSO RESOURCES | VIKING | 7-1-55 | 4-1-72 | – |
| DODSLAND VIKING GAS VOLUNTARY UNIT | DOME | VIKING | 11-1-67 | 1-1-70 | – |
| EAGLE LAKE VIKING VOLUNTARY UNIT | ESSO RESOURCES | VIKING | 10-1-66 | – | WATERFLOOD |
| EAST DODSLAND VIKING VOLUNTARY UNIT | PAGE | VIKING | 9-1-85 | – | WATERFLOOD |
| GLENEATH UNIT | ERSKINE | VIKING | 6-1-66 | 10-1-67 | WATERFLOOD |
| GLENEATH SOUTH VIKING VOLUNTARY UNIT | ULTRAMAR | VIKING | 9-1-85 | – | WATERFLOOD |
| GLIDDEN VIKING GAS VOLUNTARY UNIT NO. 1 | WESTAR | VIKING | 9-1-72 | – | – |
| HOOSIER BAKKEN SAND VOL. UNIT NO. 1 | DOME | BAKKEN | 3-1-81 | – | WATERFLOOD |
| HOOSIER VIKING SAND GAS UNIT | UNITED CANSO | VIKING | 8-1-57 | – | – |
| KIYIU LAKE VIKING VOLUNTARY UNIT | CAN. FUTURITY | VIKING | 12-1-85 | – | – |

# OIL AND GAS UNITS – ENHANCED RECOVERY PROJECTS

| WATER SOURCE | INJECTION PATTERN | ACTIVE WELLS 12/86 | | DATE OF FIRST INJECTION | INJECTION RATE, 12/86 m$^3$/DAY | UNIT NAME |
|---|---|---|---|---|---|---|
| | | PROD. | INJ. | | | |
| | | | | | | **AREA I** |
| MANNVILLE | INV. 9-SPOT & 5-SPOT | 137 | – | 05-64 | – | ABERFELDY UNIT |
| GLACIAL DRIFT | INV. 9-SPOT & 5-SPOT | 0 | – | 07-69 | – | |
| SURFACE WATER | INV. 9-SPOT | 29 | 6 | 02-81 | – | |
| DINA | 5-SPOT | 20 | –<br>– | 10-70 | –<br>– | BIG GULLY VOLUNTARY UNIT NO. 1 |
| DINA | MOD. 9-SPOT | 59 | –<br>– | 04-71 | –<br>– | GOLDEN LAKE VOLUNTARY UNIT |
| DINA | INV. & MOD. 9-SPOT | 27 | 3 | 07-71 | 35 | GULLY LAKE WASECA VOLUNTARY UNIT NO. 1 |
| DINA | 5-SPOT | 40 | – | | – | LASHBURN WASECA VOLUNTARY UNIT |
| DINA | INV. 9-SPOT | 37 | 13 | 12-85 | 260 | MARSDEN SOUTH SPARKY SAND VOLUNTARY UNIT NO. 1 |
| GLACIAL DRIFT | – | 2 | 0 | 10-70 | 0 | NORTH DULWICH SPARKY VOLUNTARY UNIT |
| DINA | 5-SPOT | 31 | 2 | 10-70 | 197 | NORTHMINSTER SPARKY VOLUNTARY UNIT |
| DINA | 5-SPOT | 57 | 0 | 09-69 | 0 | SOUTH ABERFELDY SPARKY VOLUNTARY UNIT |
| MANNVILLE | INV. 9-SPOT | 62 | 22 | 08-66 | 572 | SOUTH EPPING UNIT NO. 1 |
| DINA | INV. 9-SPOT | 39 | 13 | 03-72 | 330 | SOUTH WEST EPPING SPARKY VOLUNTARY UNIT NO. 1 |
| SURFACE WATER | INV. 9-SPOT | 17 | 5 | – | 308 | TANGLEFLAGS VOLUNTARY UNIT NO. 2 |
| – | – | 39 | – | – | – | TANGLEFLAGS VOLUNTARY UNIT NO. 3 |
| | | | | | | **AREA II** |
| DEADWOOD | INV. 9-SPOT | 71 | 22 | 12-85 | 68 | AVON HILL VIKING VOLUNTARY UNIT |
| – | – | – | – | – | – | BAYHURST VIKING VOLUNTARY GAS UNIT |
| – | – | 2 | – | – | – | BROCK VIKING SAND GAS UNIT |
| – | – | 33 | – | – | – | COLEVILLE-SMILEY VIKING SAND GAS UNIT |
| – | – | 12 | – | – | – | DODSLAND VIKING GAS VOLUNTARY UNIT |
| BELLY RIVER | INV. 9-SPOT | 208 | 13 | 01-67 | 297 | EAGLE LAKE VIKING VOLUNTARY UNIT |
| DEADWOOD | 5-SPOT | 290 | 117 | 10-85 | 1221 | EAST DODSLAND VIKING VOLUNTARY UNIT |
| BELLY RIVER | INV. 9-SPOT | 126 | 38 | 10-66 | 382 | GLENEATH UNIT |
| BELLY RIVER | INV. 9-SPOT | 6 | 2 | 07-85 | 7 | GLENEATH SOUTH VIKING VOLUNTARY UNIT |
| – | – | 2 | – | – | – | GLIDDEN VIKING GAS VOLUNTARY UNIT NO. 1 |
| PRODUCED WATER | PERIPHERAL | 6 | 2 | 01-75 | 53 | HOOSIER BAKKEN SAND VOL. UNIT NO. 1 |
| – | – | 16 | – | – | – | HOOSIER VIKING SAND GAS UNIT |
| – | – | 51 | – | – | – | KIYIU LAKE VIKING VOLUNTARY UNIT |

## OIL AND GAS UNITS – ENHANCED RECOVERY PROJECTS

| UNIT NAME | OPERATOR | PRODUCING ZONE | UNIT EFFECTIVE DATE | LATEST BOUNDARY REVISION | ENHANCED RECOVERY PROJECTS |
|---|---|---|---|---|---|
| LUCKY HILLS VIKING SAND VOLUNTARY GAS UNIT | ULTRAMAR | VIKING | 6-1-71 | – | – |
| NORTH DODSLAND VIKING VOLUNTARY UNIT | CAN. FUTURITY | VIKING | 6-1-85 | – | WATERFLOOD |
| NORTH EUREKA UNIT | UNITED CANSO | VIKING | 9-1-65 | 12-1-71 | WATERFLOOD |
| NORTH HOOSIER BAKKEN SAND VOLUNTARY UNIT | DOME | BAKKEN | 7-1-70 | 8-1-73 | WATERFLOOD |
| NORTH HOOSIER BASAL BLAIRMORE VOLUNTARY UNIT | ERSKINE | MANNVILLE | 1-1-69 | 5-1-80 | WATERFLOOD |
| PLATO VIKING VOLUNTARY UNIT NO. 1 | TRI LINK | VIKING | 4-1-73 | – | WATERFLOOD |
| SOUTH EUREKA UNIT | ULTRAMAR | VIKING | 4-1-65 | 9-1-71 | WATERFLOOD |
| TOTNES VIKING GAS VOLUNTARY UNIT NO. 1 | ICG RESOURCES | VIKING | 1-1-71 | – | – |
| WEST BAYHURST VIKING GAS VOLUNTARY UNIT | ALTEX | VIKING | 2-1-72 | – | – |
| WHITESIDE VIKING VOLUNTARY UNIT | JCIP | VIKING | 9-1-85 | – | WATERFLOOD |
| WHITESIDE VICTORIA VOLUNTARY GAS UNIT | ULTRAMAR | VICTORIA | 1-1-68 | – | – |
| **AREA III** | | | | | |
| ANTELOPE LAKE UPPER SHAUNAVON VOLUNTARY UNIT | WESTERN DECALTA | UPPER SHAUNAVON | 3-1-75 | – | WATERFLOOD |
| BATTRUM UNIT NO. 1 | MOBIL | ROSERAY | 10-1-64 | 6-1-69 | WATERFLOOD<br>IN-SITU WET COMBUSTION |
| BATTRUM UNIT NO. 2 | MOBIL | ROSERAY | 10-1-64 | – | IN-SITU WET COMBUSTION |
| BATTRUM UNIT NO. 3 | MOBIL | ROSERAY | 6-1-66 | – | WATERFLOOD<br>IN-SITU WET COMBUSTION |
| BATTRUM UNIT NO. 4 | SCEPTRE | ROSERAY | 6-1-66 | – | WATERFLOOD |
| BEVERLEY UNIT NO. 1 | MOBIL | UPPER & LOWER ROSERAY | 5-1-66 | – | WATERFLOOD |
| BONE CREEK UNIT | SASKOIL | UPPER SHAUNAVON | 6-1-58 | 7-1-60 | WATERFLOOD |
| BUTTE VOLUNTARY UNIT | DOME | UPPER SHAUNAVON | 1-1-71 | 2-1-72 | WATERFLOOD |
| CANTUAR UNIT | MOBIL | CANTUAR & LOWER ROSERAY | 10-1-59 | – | WATERFLOOD |
| COVINGTON UNIT NO. 1 | MOBIL | UPPER SHAUNAVON | 7-1-69 | – | WATERFLOOD |
| DELTA UNIT NO. 1 | MOBIL | UPPER SHAUNAVON | 4-1-66 | 6-1-69 | WATERFLOOD |
| DELTA UNIT NO. 2 | MOBIL | UPPER SHAUNAVON | 8-1-69 | – | WATERFLOOD |
| DELTA VOLUNTARY UNIT NO. 3 | MOBIL | UPPER SHAUNAVON | 12-1-86 | – | WATERFLOOD |
| DOLLARD UNIT | ENCOR ENERGY | UPPER SHAUNAVON | 9-1-55 | 7-1-72 | WATERFLOOD |
| EAST BEVERLEY VOLUNTARY GAS UNIT NO. 1 | MOBIL | CANTUAR | 8-1-78 | – | – |
| EAST CANTUAR GAS UNIT | DOME | CANTUAR & ROSERAY | 3-1-75 | – | GAS STORAGE |

## OIL AND GAS UNITS – ENHANCED RECOVERY PROJECTS

| WATER SOURCE | INJECTION PATTERN | ACTIVE WELLS 12/86 | | DATE OF FIRST INJECTION | INJECTION RATE, 12/86 m$^3$/DAY | UNIT NAME |
|---|---|---|---|---|---|---|
| | | PROD. | INJ. | | | |
| – | – | 7 | – | – | – | LUCKY HILLS VIKING SAND VOLUNTARY GAS UNIT |
| DEADWOOD | INV. 9-SPOT | 76 | 29 | 12-85 | 160 | NORTH DODSLAND VIKING VOLUNTARY UNIT |
| BELLY RIVER | INV. 9-SPOT | 37 | 12 | 03-63 | 436 | NORTH EUREKA UNIT |
| RIBSTONE CREEK | LINE DRIVE | 17 | 3 | 08-70 | 496 | NORTH HOOSIER BAKKEN SAND VOLUNTARY UNIT |
| LEA PARK | – | 19 | 7 | 12-66 | 556 | NORTH HOOSIER BASAL BLAIRMORE VOLUNTARY UNIT |
| BELLY RIVER | INV. 9-SPOT | 13 | 1 | 01-73 | 12 | PLATO VIKING VOLUNTARY UNIT NO. 1 |
| RIBSTONE CREEK & BELLY RIVER | INV. 9-SPOT | 64 | 17 | 09-73 | 251 | SOUTH EUREKA UNIT |
| – | – | 2 | – | – | – | TOTNES VIKING GAS VOLUNTARY UNIT NO. 1 |
| – | – | 1 | – | – | – | WEST BAYHURST VIKING GAS VOLUNTARY UNIT |
| DUPEROW | INV. 9-SPOT | 25 | 8 | 05-65 | 133 | WHITESIDE VIKING VOLUNTARY UNIT |
| – | – | 2 | – | – | – | WHITESIDE VICTORIA VOLUNTARY GAS UNIT |
| | | | | | | **AREA III** |
| ROSERAY | – | 3 | 1 | 10-76 | 16 | ANTELOPE LAKE UPPER SHAUNAVON VOLUNTARY UNIT |
| BELLY RIVER<br>– | PERIPHERAL<br>– | 71 | 2<br>7 | 03-62<br>10-66 | 1433 | BATTRUM UNIT NO. 1 |
| – | – | 12 | 2 | 11-65 | 380 | BATTRUM UNIT NO. 2 |
| MANNVILLE<br>– | INV. 9-SPOT<br>– | 22 | 2<br>3 | 12-66<br>08-67 | 232 | BATTRUM UNIT NO. 3 |
| MANNVILLE | INV. 9-SPOT | 11 | 4 | 08-66 | 899 | BATTRUM UNIT NO. 4 |
| MANNVILLE | PERIPHERAL | 29 | 2 | 01-66 | 409 | BEVERLEY UNIT NO. 1 |
| BELLY RIVER | PERIPHERAL & INV. 9-SPOT | 29 | 11 | 05-60 | 1326 | BONE CREEK UNIT |
| BELLY RIVER | INV. 9-SPOT | 33 | 7 | 11-70 | 280 | BUTTE VOLUNTARY UNIT |
| BELLY RIVER | PERIPHERAL | 83<br>17 | 25<br>– | 08-60<br>– | 4170<br>– | CANTUAR UNIT |
| ROSERAY SAND | – | 4 | 1 | 11-88 | 113 | COVINGTON UNIT NO. 1 |
| BELLY RIVER | INV. 9-SPOT | 33 | 10 | 12-65 | 1861 | DELTA UNIT NO. 1 |
| BELLY RIVER | – | 13 | 3 | 10-69 | 427 | DELTA UNIT NO. 2 |
| – | – | 4 | – | – | – | DELTA VOLUNTARY UNIT NO. 3 |
| VIKING, BELLY RIVER & MANNVILLE | SEMI-PERIPHERAL | 40 | 17 | 03-56 | 2498 | DOLLARD UNIT |
| – | – | 2 | – | – | – | EAST BEVERLEY VOLUNTARY GAS UNIT NO. 1 |
| – | – | – | – | – | – | EAST CANTUAR GAS UNIT |

# OIL AND GAS UNITS – ENHANCED RECOVERY PROJECTS

| UNIT NAME | OPERATOR | PRODUCING ZONE | UNIT EFFECTIVE DATE | LATEST BOUNDARY REVISION | ENHANCED RECOVERY PROJECTS |
|---|---|---|---|---|---|
| EAST CANTUAR UNIT NO. 1 | MOBIL | CANTUAR & ROSERAY | 3-1-75 | – | WATERFLOOD (CANTUAR & ROSERAY) |
| EAST CANTUAR UNIT NO. 2 | DOME | ROSERAY & CANTUAR | 3-1-75 | – | WATERFLOOD (ROSERAY) |
| EAST DOLLARD VOLUNTARY UNIT | AMERICAN EAGLE | UPPER SHAUNAVON | 10-1-70 | – | WATERFLOOD |
| FOSTERTON MAIN UNIT | MOBIL | ROSERAY | 7-1-58 | – | WATERFLOOD |
| FOSTERTON N.W. UNIT | MOBIL | ROSERAY | 7-1-58 | 9-1-70 | WATERFLOOD (SUSPENDED)<br>IN-SITU WET COMBUSTION |
| GULL LAKE CANTUAR VOLUNTARY UNIT NO. 1 | DOME | CANTUAR | 5-1-72 | – | WATERFLOOD |
| GULL LAKE NORTH SHAUNAVON POOL UNIT | MOBIL | UPPER SHAUNAVON | 10-1-58 | – | WATERFLOOD |
| GULL LAKE SOUTH VOLUNTARY UNIT NO. 1 | MOBIL | UPPER SHAUNAVON | 7-1-86 | – | WATERFLOOD |
| GULL LAKE UPPER SHAUNAVON VOLUNTARY UNIT NO. 1 | DOME | UPPER SHAUNAVON | 5-1-72 | – | WATERFLOOD |
| HATTON GAS UNIT | SPC | MEDICINE HAT | 5-1-59 | – | – |
| HAZLET UNIT | CENERGY | ROSERAY | 8-1-66 | – | WATERFLOOD |
| ILLERBRUN VOLUNTARY UNIT | DOME | UPPER SHAUNAVON | 11-1-66 | 5-1-67 | WATERFLOOD |
| INSTOW UNIT | ENCOR ENERGY | UPPER SHAUNAVON | 10-1-59 | – | WATERFLOOD |
| INSTOW SOUTH UPPER SHAUNAVON VOLUNTARY UNIT | UNIVERSAL | UPPER SHAUNAVON | 5-1-85 | – | WATERFLOOD |
| JOHNSTON UNIT | DOME | BASAL CANTUAR<br>UPPER SHAUNAVON | 1-1-63 | – | WATERFLOOD (BASAL CANTUAR) |
| LEITCHVILLE SHAUNAVON VOLUNTARY UNIT | SUNCOR | SHAUNAVON | 1-1-68 | – | WATERFLOOD |
| NORTH PREMIER UNIT NO. 1 | MOBIL | ROSERAY & UPPER SHAUNAVON | 10-1-64 | – | WATERFLOOD (ROSERAY) |
| NORTH PREMIER UNIT NO. 2 | MOBIL | PREMIER SAND | 7-1-66 | – | WATERFLOOD |
| NORTH PREMIER VOLUNTARY UNIT NO. 4 | MOBIL | ROSERAY & UPPER SHAUNAVON | 9-1-80 | – | WATERFLOO |
| NORTH PREMIER UPPER SHAUNAVON VOLUNTARY UNIT | SUNCOR | UPPER SHAUNAVON | 11-1-72 | – | WATERFLOOD |
| NORTH RAPDAN UPPER SHAUNAVON VOLUNTARY UNIT | ESSO RESOURCES | UPPER SHAUNAVON | 2-1-68 | 5-1-68 | WATERFLOOD |
| RAPDAN UNIT | ENCOR ENERGY | UPPER SHAUNAVON | 10-1-57 | 7-1-65 | WATERFLOOD |
| RAPDAN UPPER SHAUNAVON VOLUNTARY UNIT NO. 2 | SASKOIL | UPPER SHAUNAVON | 4-1-74 | – | WATERFLOOD |
| SOUTHWEST SUCCESS VOLUNTARY UNIT | ATCOR | ROSERAY & CANTUAR | 4-1-83 | – | – |
| SUCCESS UNIT | MOBIL | ROSERAY & FOSTERTON | 12-1-57 | – | WATERFLOOD |
| SUCCESS ALPHA UNIT | MOBIL | ROSERAY | 7-1-60 | – | WATERFLOOD |
| SUCCESS MAIN UNIT | MOBIL | CANTUAR, ROSERAY & FOSTERTON | 9-1-62 | – | WATERFLOOD (ROSERAY) |
| SUCCESS NORTH ROSERAY VOLUNTARY UNIT | TRI LINK | ROSERAY | 4-1-84 | – | WATERFLOOD |
| SUFFIELD UNIT NO. 1 | MOBIL | ROSERAY | 7-1-66 | 4-1-72 | WATERFLOOD |

# OIL AND GAS UNITS – ENHANCED RECOVERY PROJECTS

| WATER SOURCE | INJECTION PATTERN | ACTIVE WELLS 12/86 | | DATE OF FIRST INJECTION | INJECTION RATE, 12/86 $m^3$/DAY | UNIT NAME |
|---|---|---|---|---|---|---|
| | | PROD. | INJ. | | | |
| MANNVILLE | – | 6 | 2 | 09-75 | 164 | EAST CANTUAR UNIT NO. 1 |
| | | 7 | 3 | 03-69 | 319 | |
| MANNVILLE | – | 1 | 1 | 01-76 | 10 | EAST CANTUAR UNIT NO. 2 |
| | | 2 | – | – | – | |
| BELLY RIVER | PERIPHERAL | 9 | 1 | 10-70 | 374 | EAST DOLLARD VOLUNTARY UNIT |
| BELLY RIVER | LINE DRIVE | 18 | 12 | 06-56 | 3427 | FOSTERTON MAIN UNIT |
| BELLY RIVER | – | – | – | 03-57 | – | FOSTERTON N.W. UNIT |
| – | – | 5 | 2 | 03-70 | 211 | |
| BELLY RIVER | PERIPHERAL & MOD. 9-SPOT | 7 | 3 | 06-70 | 191 | GULL LAKE CANTUAR VOLUNTARY UNIT NO. 1 |
| SURFACE WATER | – | 24 | 3 | 08-56 | 1353 | GULL LAKE NORTH SHAUNAVON POOL UNIT |
| – | – | 9 | – | – | – | GULL LAKE SOUTH VOLUNTARY UNIT NO. 1 |
| BELLY RIVER | – | 5 | 2 | 05-72 | 127 | GULL LAKE UPPER SHAUNAVON VOLUNTARY UNIT NO. 1 |
| – | – | 96 | – | – | – | HATTON GAS UNIT |
| MANNVILLE | PERIPHERAL | 3 | 1 | 07-70 | 149 | HAZLET UNIT |
| BELLY RIVER | – | 5 | 3 | 04-66 | 904 | ILLERBRUN VOLUNTARY UNIT |
| BELLY RIVER & RAVENSCRAG | PERIPHERAL | 50 | 22 | 12-57 | 4329 | INSTOW UNIT |
| BELLY RIVER | – | 10 | 2 | 12-85 | 84 | INSTOW SOUTH UPPER SHAUNAVON VOLUNTARY UNIT |
| SURFACE WATER | – | 2 | 2 | 03-63 | 74 | JOHNSTON UNIT |
| – | – | 1 | – | – | – | |
| BELLY RIVER | – | 8 | 3 | 07-64 | 55 | LEITCHVILLE SHAUNAVON VOLUNTARY UNIT |
| MANNVILLE | – | 5 | 2 | 07-64 | 1232 | NORTH PREMIER UNIT NO. 1 |
| | | 1 | – | | | |
| MANNVILLE | – | 1 | 1 | 06-67 | 97 | NORTH PREMIER UNIT NO. 2 |
| MANNVILLE | PERIPHERAL | 14 | 5 | 02-65 | 3140 | NORTH PREMIER VOLUNTARY UNIT NO. 4 |
| | – | 16 | 1 | 12-80 | 78 | |
| MANNVILLE | – | 7 | 2 | 02-73 | 27 | NORTH PREMIER UPPER SHAUNAVON VOLUNTARY UNIT |
| BELLY RIVER | – | 8 | 1 | 07-68 | 8 | NORTH RAPDAN UPPER SHAUNAVON VOLUNTARY UNIT |
| BELLY RIVER | PERIPHERAL | 47 | 20 | 11-62 | 884 | RAPDAN UNIT |
| BELLY RIVER | PARTIAL 5-SPOT | 4 | 1 | 04-74 | 25 | RAPDAN UPPER SHAUNAVON VOLUNTARY UNIT NO. 2 |
| – | – | 10 | 1 | 10-80 | 115 | SOUTHWEST SUCCESS VOLUNTARY UNIT |
| | | 1 | – | | | |
| MANNVILLE | PERIPHERAL | 24 | 4 | 08-58 | 2257 | SUCCESS UNIT |
| MANNVILLE | – | 5 | 1 | 09-80 | 408 | SUCCESS ALPHA UNIT |
| MANNVILLE | PERIPHERAL | 13 | 5 | 09-56 | 1339 | SUCCESS MAIN UNIT |
| MANNVILLE | PERIPHERAL | 12 | 1 | 06-82 | 344 | SUCCESS NORTH ROSERAY VOLUNTARY UNIT |
| BELLY RIVER | PERIPHERAL | 10 | 2 | 05-86 | 817 | SUFFIELD UNIT NO. 1 |

## OIL AND GAS UNITS – ENHANCED RECOVERY PROJECTS

| UNIT NAME | OPERATOR | PRODUCING ZONE | UNIT EFFECTIVE DATE | LATEST BOUNDARY REVISION | ENHANCED RECOVERY PROJECTS |
|---|---|---|---|---|---|
| SUFFIELD UNIT NO. 2 | MOBIL | UPPER SHAUNAVON | 9-1-70 | – | WATERFLOOD |
| SUFFIELD UNIT NO. 3 | MOBIL | ROSERAY & UPPER SHAUNAVON | 6-1-71 | 4-1-72 | WATERFLOOD |
| VERLO ROSERAY SAND UNIT | MOBIL | ROSERAY | 9-1-70 | 10-1-7 | WATERFLOOD |
| WEST FOSTERTON VOLUNTARY UNIT | TEXACO | ROSERAY | 3-1-67 | – | WATERFLOOD |
| **AREA IV** | | | | | |
| ALAMEDA CENTRAL UNIT | GULF | MIDALE | 12-1-62 | 6-1-69 | WATERFLOOD |
| ALAMEDA EAST UNIT | DOME | MIDALE | 8-1-62 | 9-1-65 | WATERFLOOD |
| ALAMEDA WEST MIDALE VOLUNTARY UNIT NO. 1 | ARGYLL | MIDALE | 12-1-84 | | WATERFLOOD |
| ALIDA UNIT | MOBIL | ALIDA | 12-1-57 | – | – |
| ANTLER VOLUNTARY UNIT NO. 1 | SADELLE | MIDALE | 11-1-71 | – | WATERFLOOD |
| BENSON UNIT | SHELL | MIDALE | 2-1-65 | 9-1-67 | WATERFLOOD |
| BENSON MIDALE BEDS VOLUNTARY UNIT NO. 1 | DOME | MIDALE | 11-1-67 | 6-1-68 | WATERFLOOD |
| CANTAL FROBISHER-ALIDA BEDS VOLUNTARY UNIT NO. 1 | SASKOIL | FROBISHER-ALIDA | 1-1-72 | – | – |
| CARNDUFF SOUTH MIDALE VOLUNTARY UNIT NO. 1 | BEDFORD | MIDALE | 1-1-85 | – | WATERFLOOD |
| CARNDUFF VOLUNTARY UNIT NO. 1 | SCEPTRE | MIDALE | 12-1-70 | – | WATERFLOOD |
| CULLEN UNIT | NORCEN | MIDALE | 10-1-65 | 5-1-66 | – |
| DOUGLASTON-FROBISHER BEDS UNIT | DOME | FROBISHER | 6-1-64 | – | – |
| DOUGLASTON-MIDALE BEDS UNIT | DOME | MIDALE | 6-1-64 | 10-1-67 | WATERFLOOD |
| EAST CARNDUFF UNIT | GULF | MIDALE | 5-1-62 | 11-1-65 | WATERFLOOD |
| ELMORE FROBISHER BEDS VOLUNTARY UNIT NO. 1 | ESSO RESOURCES | FROBISHER | 12-1-69 | – | WATERFLOOD |
| FLAT LAKE RATCLIFFE VOLUNTARY UNIT NO. 1 | PANCANADIAN | RATCLIFFE | 8-1-66 | 9-1-69 | WATERFLOOD |
| FLETWODE ALIDA VOLUNTARY UNIT | CANOXY | ALIDA | 10-1-68 | – | – |
| GAINSBOROUGH FROBISHER-ALIDA VOLUNTARY UNIT | BERRY | FROBISHER-ALIDA | 11-1-72 | – | WATERFLOOD (FROBISHER) |
| GLEN EWEN UNIT | SCEPTRE | MIDALE | 4-1-63 | – | WATERFLOOD |
| HASTINGS FROBISHER UNIT | SASKOIL | FROBISHER | 7-1-71 | – | WATERFLOOD |
| HASTINGS FROBISHER BEDS VOLUNTARY UNIT NO. 1 | GULF | FROBISHER | 1-1-70 | – | WATERFLOOD |
| HASTINGS FROBISHER BEDS VOLUNTARY UNIT NO. 2 | MONT | FROBISHER | 10-1-70 | – | WATERFLOOD |
| HUMMINGBIRD BIRDBEAR VOLUNTARY UNIT NO. 1 | DOME | BIRDBEAR | 12-1-68 | – | – |
| HUMMINGBIRD RATCLIFFE VOLUNTARY UNIT NO. 1 | DOME | RATCLIFFE | 12-1-68 | – | WATERFLOOD |
| HUNTOON MIDALE BEDS VOLUNTARY UNIT NO. 1 | TEXACO | MIDALE | 2-1-74 | – | WATERFLOOD |
| INGOLDSBY MISSION CANYON VOLUNTARY UNIT | ESSO RESOURCES | ALIDA | 9-1-68 | – | – |

# OIL AND GAS UNITS – ENHANCED RECOVERY PROJECTS

| WATER SOURCE | INJECTION PATTERN | ACTIVE WELLS 12/86 PROD. | INJ. | DATE OF FIRST INJECTION | INJECTION RATE, 12/86 m³/DAY | UNIT NAME |
|---|---|---|---|---|---|---|
| BELLY RIVER | – | 13 | 3 | 07-70 | 639 | SUFFIELD UNIT NO. 2 |
| BELLY RIVER | PERIPHERAL | 11<br>4 | 4<br>1 | 06-70 | 1248<br>72 | SUFFIELD UNIT NO. 3 |
| MANNVILLE | – | 14 | 5 | 06-65 | 4256 | VERLO ROSERAY SAND UNIT |
| BELLY RIVER | – | 8 | 2 | 04-67 | 365 | WEST FOSTERTON VOLUNTARY UNIT |
| | | | | | | **AREA IV** |
| MANNVILLE | INV. 9-SPOT | 14 | 6 | 03-60 | 95 | ALAMEDA CENTRAL UNIT |
| MANNVILLE | INV. 9-SPOT | 32 | 18 | 12-62 | 306 | ALAMEDA EAST UNIT |
| MANNVILLE | PERIPHERAL | 4 | 3 | 12-84 | 20 | ALAMEDA WEST MIDALE VOLUNTARY UNIT NO. 1 |
| – | – | 38 | – | – | – | ALIDA UNIT |
| MANNVILLE | – | 3 | 1 | 11-68 | 21 | ANTLER VOLUNTARY UNIT NO. 1 |
| MANNVILLE | INV. 9-SPOT | 46 | 14 | 11-64 | 325 | BENSON UNIT |
| MANNVILLE | INV. 9-SPOT | 12 | 4 | 11-67 | 136 | BENSON MIDALE BEDS VOLUNTARY UNIT NO. 1 |
| – | – | 3 | – | – | – | CANTAL FROBISHER-ALIDA BEDS VOLUNTARY UNIT NO. 1 |
| PRODUCED WATER | INV. 9-SPOT | 16 | 4 | 08-65 | 104 | CARNDUFF SOUTH MIDALE VOLUNTARY UNIT |
| RAVENSCRAG | – | 3 | 2 | 05-71 | 30 | CARNDUFF VOLUNTARY UNIT NO. 1 |
| – | – | 7 | – | – | – | CULLEN UNIT |
| – | – | 4 | – | – | – | DOUGLASTON-FROBISHER BEDS UNIT |
| MANNVILLE | LINE DRIVE | 12 | 8 | 06-64 | 300 | DOUGLASTON-MIDALE BEDS UNIT |
| MANNVILLE | INV. 9-SPOT | 107 | 19 | 07-62 | 1280 | EAST CARNDUFF UNIT |
| MANNVILLE | INV. 9-SPOT | 26 | 3 | 11-70 | 158 | ELMORE FROBISHER BEDS VOLUNTARY UNIT NO. 1 |
| MANNVILLE | INV. 9-SPOT | 29 | 8 | 10-68 | 571 | FLAT LAKE RATCLIFFE VOLUNTARY UNIT NO. 1 |
| – | – | 4 | – | – | – | FLETWODE ALIDA VOLUNTARY UNIT |
| PRODUCED WATER | – | 6 | 1 | 08-73 | 110 | GAINSBOROUGH FROBISHER-ALIDA VOLUNTARY UNIT |
| MANNVILLE | INV. 9-SPOT | 37 | 7 | 10-63 | 338 | GLEN EWEN UNIT |
| MANNVILLE | INV. 9-SPOT | 10 | 1 | 10-67 | 114 | HASTINGS FROBISHER UNIT |
| MANNVILLE | PERIPHERAL | 29 | 5 | 11-66 | 287 | HASTINGS FROBISHER BEDS VOLUNTARY UNIT NO. 1 |
| MANNVILLE | INV. 9-SPOT & PERIPHERAL | 19 | 5 | 11-66 | 284 | HASTINGS FROBISHER BEDS VOLUNTARY UNIT NO. 2 |
| – | – | 3 | – | – | – | HUMMINGBIRD BIRDBEAR VOLUNTARY UNIT NO. 1 |
| MANNVILLE | – | 9 | 2 | 12-67 | 234 | HUMMINGBIRD RATCLIFFE VOLUNTARY UNIT NO. 1 |
| PRODUCED WATER | – | 18 | 5 | 09-74 | 43 | HUNTOON MIDALE BEDS VOLUNTARY UNIT NO. 1 |
| – | – | 37 | – | – | – | INGOLDSBY MISSION CANYON VOLUNTARY UNIT |

# OIL AND GAS UNITS – ENHANCED RECOVERY PROJECTS

| UNIT NAME | OPERATOR | PRODUCING ZONE | UNIT EFFECTIVE DATE | LATEST BOUNDARY REVISION | ENHANCED RECOVERY PROJECTS |
|---|---|---|---|---|---|
| KENOSEE TILSTON BEDS VOLUNTARY UNIT | ENCOR ENERGY | TILSTON | 9-1-69 | – | – |
| KISBEY UPPER HASTINGS VOLUNTARY UNIT NO. 1 | DAG RESOURSES | UPPER HASTINGS | 4-1-74 | – | – |
| LAKE ALMA VOLUNTARY UNIT | PANCANADIAN | RATCLIFFE | 4-1-69 | – | WATERFLOOD |
| LAMPMAN UNIT | GULF | MIDALE | 3-1-64 | 10-1-67 | WATERFLOOD |
| LOST HORSE HILL FROBISHER-ALIDA BEDS VOL. UNIT NO. 1 | ESSO RESOURCES | FROBISHER-ALIDA | 1-1-71 | – | – |
| MIDALE UNIT | SHELL | MIDALE | 8-1-62 | 9-1-67 | WATERFLOOD |
| NORTH ALAMEDA UNIT | GULF | MIDALE | 5-1-63 | – | WATERFLOOD |
| NORTH CANTAL UNIT | ESSO RESOURCES | ALIDA | 1-1-66 | 4-1-69 | – |
| NORTH CENTRAL WILLMAR VOLUNTARY UNIT | ENCOR ENERGY | FROBISHER-ALIDA | 3-1-76 | – | WATERFLOOD |
| NORTH DALESBORO UNIT NO. 1 | ESSO RESOURCES | FROBISHER-ALIDA | 12-1-70 | – | WATERFLOOD |
| NORTHGATE MIDALE VOLUNTARY UNIT | SILVER BAY | MIDALE | 1-1-84 | – | WATERFLOOD |
| NORTHWEST BENSON MIDALE VOLUNTARY UNIT | SILVER BAY | MIDALE | 2-1-85 | – | WATERFLOOD |
| NOTTINGHAM NORTH ALIDA BEDS UNIT | MOBIL | ALIDA | 10-1-60 | – | – |
| OUNGRE VOLUNTARY UNIT NO. 1 | SUNCOR | OUNGRE | 1-1-68 | 12-1-69 | WATERFLOOD |
| QUEENSVILLE WILLMAR KISBEY SAND VOLUNTARY UNIT | GULF | KISBEY SAND | 7-1-69 | – | – |
| ROSEBANK FROBISHER-ALIDA BEDS VOLUNTARY UNIT NO 1. | ESSO RESOURCES | FROBISHER-ALIDA | 3-1-69 | 7-1-71 | – |
| SOUTH ALAMEDA UNIT | SUNCOR | MIDALE | 10-1-65 | – | WATERFLOOD |
| SOUTH PINTO UNIT | DOME | MIDALE | 2-1-65 | 10-1-66 | WATERFLOOD |
| STEELMAN FROBISHER BEDS VOLUNTARY UNIT NO. 1 | GULF | FROBISHER | 10-1-70 | – | – |
| STEELMAN NORTH MIDALE VOLUNTARY UNIT NO. 1 | CYMRIC | MIDALE | 5-1-83 | – | WATERFLOOD |
| STEELMAN NORTH MIDALE VOLUNTARY UNIT NO. 2 | CYMRIC | MIDALE | 10-1-85 | – | WATERFLOOD |
| STEELMAN UNIT NO. IA | ESSO RESOURCES | MIDALE | 7-1-61 | 4-1-69 | WATERFLOOD |
| STEELMAN UNIT NO. II | ESSO RESOURCE | MIDALE | 7-1-61 | – | WATERFLOOD |
| STEELMAN UNIT NO. III | GULF | MIDALE | 7-1-61 | – | WATERFLOOD |
| STEELMAN UNIT NO. IV | GULF | MIDALE | 7-1-61 | 4-1-69 | WATERFLOOD |
| STEELMAN UNIT NO. V | SUNCOR | MIDALE | 7-1-61 | 7-1-65 | WATERFLOOD |
| STEELMAN UNIT NO. VI | GULF | MIDALE | 7-1-61 | 9-1-68 | WATERFLOOD |
| STEELMAN UNIT NO. VII | SUNCOR | MIDALE | 6-1-62 | – | WATERFLOOD |
| VIEWFIELD VOLUNTARY UNIT NO.1 | COMAPLEX | FROBISHER | 5-1-74 | – | WATERFLOOD |
| WEST CARNDUFF UNIT | ESSO RESOURCES | MIDALE | 1-1-61 | 5-1-62 | WATERFLOOD |
| WEYBURN UNIT | PANCANADIAN | MIDALE | 7-1-63 | 3-1-71 | WATERFLOOD |
| WILLMAR FROBISHER-ALIDA VOLUNTARY UNIT NO. 1 | SCEPTRE | FROBISHER-ALIDA | 1-1-68 | – | WATERFLOOD |
| WORKMAN-FROBISHER VOLUNTARY UNIT NO. 1 | SCURRY-RAINBOW | FROBISHER | 4-1-67 | – | WATERFLOOD |
| WORKMAN-MIDALE VOLUNTARY UNIT NO. 1 | SADELLE | MIDALE | 4-1-66 | – | WATERFLOOD |
| WORKMAN-MIDALE VOLUNTARY UNIT NO. 2 | SCURRY-RAINBOW | MIDALE | 9-1-66 | – | WATERFLOOD |

# OIL AND GAS UNITS – ENHANCED RECOVERY PROJECTS

| WATER SOURCE | INJECTION PATTERN | ACTIVE WELLS 12/86 |  | DATE OF FIRST INJECTION | INJECTION RATE, 12/86 m³/DAY | UNIT NAME |
|---|---|---|---|---|---|---|
|  |  | PROD. | INJ. |  |  |  |
| – | – | 27 | – | – | – | KENOSEE TILSTON BEDS VOLUNTARY UNIT |
| – | – | 9 | – | – | – | KISBEY UPPER HASTINGS VOLUNTARY UNIT NO. 1 |
| MANNVILLE | – | 8 | 3 | 06-70 | 332 | LAKE ALMA VOLUNTARY UNIT |
| MANNVILLE | INV. 9-SPOT | 9 | 3 | 04-64 | 75 | LAMPMAN UNIT |
| – | – | 23 | – | – | – | LOST HORSE HILL FROBISHER-ALIDA BEDS VOL. UNIT NO. 1 |
| MANNVILLE | INV. 9-SPOT | 327 | 78 | 06-60 | 4178 | MIDALE UNIT |
| MANNVILLE | PERIPHERAL | 7 | 4 | 12-59 | 51 | NORTH ALAMEDA UNIT |
| – | – | 12 | – | – | – | NORTH CANTAL UNIT |
| MANNVILLE | INV. 9-SPOT | 7 | 1 | 11-76 | 23 | NORTH CENTRAL WILLMAR VOLUNTARY UNIT |
| MANNVILLE | PERIPHERAL | 10 | 2 | 02-71 | 170 | NORTH DALESBORO UNIT NO. 1 |
| MANNVILLE | INV. 9-SPOT | 18 | 1 | 07-84 | 7 | NORTHGATE MIDALE VOLUNTARY UNIT |
| MANNVILLE | INV. 9-SPOT | 6 | 1 | 09-85 | 26 | NORTHWEST BENSON MIDALE VOLUNTARY UNIT |
| – | – | 23 | – | – | – | NOTTINGHAM NORTH ALIDA BEDS UNIT |
| MANNVILLE | INV. 9-SPOT | 43 | 12 | 12-66 | 380 | OUNGRE VOLUNTARY UNIT NO. 1 |
| – | – | 3 | – | – | – | QUEENSVILLE WILLMAR KISBEY SAND VOLUNTARY UNIT |
| – | – | 31 | – | – | – | ROSEBANK FROBISHER-ALIDA BEDS VOLUNTARY UNIT NO 1. |
| MANNVILLE | INV. 9-SPOT | 14 | 6 | 02-63 | 108 | SOUTH ALAMEDA UNIT |
| MANNVILLE | PERIPHERAL | 26 | 6 | 02-65 | 257 | SOUTH PINTO UNIT |
| – | – | 8 | – | – | – | STEELMAN FROBISHER BEDS VOLUNTARY UNIT NO. 1 |
| MANNVILLE | INV. 9-SPOT | 13 | 2 | 09-83 | 37 | STEELMAN NORTH MIDALE VOLUNTARY UNIT NO. 1 |
| MANNVILLE | INV. 9-SPOT | 13 | 2 | 12-86 | 62 | STEELMAN NORTH MIDALE VOLUNTARY UNIT NO. 2 |
| MANNVILLE | INV. 9-SPOT | 101 | 35 | 09-58 | 1393 | STEELMAN UNIT NO. IA |
| MANNVILLE | INV. 9-SPOT | 60 | 7 | 02-62 | 1069 | STEELMAN UNIT NO. II |
| MANNVILLE | INV. 9-SPOT | 61 | 19 | 01-62 | 1451 | STEELMAN UNIT NO. III |
| MANNVILLE | INV. 9-SPOT | 97 | 35 | 02-62 | 1526 | STEELMAN UNIT NO. IV |
| MANNVILLE | INV. 9-SPOT | 36 | 20 | 02-62 | 472 | STEELMAN UNIT NO. V |
| MANNVILLE | INV. 9-SPOT | 100 | 42 | 02-62 | 2843 | STEELMAN UNIT NO. VI |
| MANNVILLE | INV. 9-SPOT | 13 | 3 | 10-62 | 127 | STEELMAN UNIT NO. VII |
| PRODUCED WATER | PERIPHERAL | 8 | 1 | 11-86 | 25 | VIEWFIELD VOLUNTARY UNIT NO.1 |
| MANNVILLE | INV. 9-SPOT | 29 | 11 | 05-61 | 380 | WEST CARNDUFF UNIT |
| MANNVILLE | INV. 9-SPOT | 546 | 147 | 04-64 | 9067 | WEYBURN UNIT |
| MANNVILLE | INV. 9-SPOT | 18 | 5 | 02-88 | 282 | WILLMAR FROBISHER-ALIDA VOLUNTARY UNIT NO. 1 |
| MANNVILLE | INV. 9-SPOT | 29 | 12 | 06-67 | 853 | WORKMAN-FROBISHER VOLUNTARY UNIT NO. 1 |
| MANNVILLE | INV. 9-SPOT | 4 | 1 | 04-88 | 29 | WORKMAN-MIDALE VOLUNTARY UNIT NO. 1 |
| MANNVILLE | PERIPHERAL | 5 | 1 | 09-88 | 65 | WORKMAN-MIDALE VOLUNTARY UNIT NO. 2 |

## NON-UNIT – ENHANCED RECOVERY PROJECTS

| POOL NAME | OPERATOR | PRODUCING ZONE | PROJECT EFFECTIVE DATE | LATEST BOUNDARY REVISION | ENHANCED RECOVERY PROJECTS |
|---|---|---|---|---|---|
| **AREA I** | | | | | |
| CELTIC WASECA SAND | MOBIL | WASECA & G.P. | 12-8-77 | 8-31-84 | INTERMITTENT STEAM INJECTION |
| EYEHILL CUMMINGS SAND | MURPHY | CUMMINGS | 12-8-77 | 5-15-84 | IN-SITU COMBUSTION |
| GOLDEN LAKE SOUTH SPARKY SAND | HUSKY | SPARKY | 11-6-88 | 5-31-83 | IN-SITU WET COMBUSTION |
| GOLDEN LAKE SOUTH WASECA SAND | HUSKY | WASECA | 3-19-81 | 6-6-84 | IN-SITU WET COMBUSTION |
| GOLDEN LAKE SOUTH WASECA SAND | HUSKY | WASECA | 2-8-82 | – | IN-SITU OXYGEN WET-COMBUSTION |
| LONE ROCK SPARKY SAND | TEXACO | SPARKY | 10-24-83 | – | STEAMFLOOD |
| MISCELLANEOUS LLOYDMINSTER SAND | CANTERRA | LLOYDMINSTER | 2-4-74 | 3-31-82 | CYCLIC STEAM STIMULATION (SUSPENDED) |
| PIKES PEAK WASECA SAND | HUSKY | WASECA | 8-10-81 | 2-28-84 | CYCLIC STEAM STIMUATION |
| SILVERDALE SPARKY SAND | HOME | SPARKY | 6-27-84 | – | WATER ALTERNATING GAS |
| TANGLEFLAGS G.P. SAND | HUSKY | G.P. | 11-30-83 | – | IN-SITU WET COMBUSTION |
| **AREA II** | | | | | |
| BUFFALO COULEE BAKKEN SAND | SASKOIL | BAKKEN | 11-28-69 | 11-23-79 | WATERFLOOD |
| BUFFALO COULEE BAKKEN SAND | PAGE | BAKKEN | 11-23-79 | 7-31-80 | WATERFLOOD |
| COLEVILLE BAKKEN | GEN. AMERICAN | BAKKEN | 12-18-56 | 5-29-86 | WATERFLOOD |
| DODSLAND VIKING SAND | EUCLA | VIKING | 3-5-85 | – | WATERFLOOD |
| DODSLAND VIKING SAND | WESTAR | VIKING | 4-1-85 | – | PILOT WATERFLOOD |
| DODSLAND VIKING SAND | SUNCOR | VIKING | 7-11-85 | – | WATERFLOOD |
| DODSLAND VIKING SAND | CALANA | VIKING | 12-4-85 | – | WATERFLOOD |
| KERROBERT VIKING SAND | CN EXPLORATION | VIKING | 12-3-85 | – | PILOT WATERFLOOD |
| SMILEY-DEWAR VIKING | ESSO RESOURCES | VIKING | 9-22-61 | 5-2-86 | WATERFLOOD |
| SMILEY-DEWAR VIKING | PETRO-CANADA | VIKING | 1-30-73 | 11-1-73 | WATERFLOOD |
| **AREA III** | | | | | |
| BEVERLEY CANTUAR SAND | MOBIL | CANTUAR | 9-29-71 | – | PILOT WATERFLOOD |
| JAVA CANTUAR SAND | TIBER | CANTUAR | 8-27-84 | – | WATERFLOOD |

## NON-UNIT – ENHANCED RECOVERY PROJECTS

| WATER SOURCE | INJECTION PATTERN | ACTIVE WELLS 12/86 PROD. | ACTIVE WELLS 12/86 INJ. | DATE OF FIRST INJECTION | INJECTION RATE, 12/86 m³/DAY | POOL NAME |
|---|---|---|---|---|---|---|
| | | | | | | **AREA I** |
| SURFACE WATER | INV. 9-SPOT | 13 | – | 10-80 | – | CELTIC WASECA SAND |
| – | INV. 5-SPOT | 5 | – | | – | |
| GLACIAL DRIFT | INV. 5-SPOT | 20 | 9 | 06-80 | – | EYEHILL CUMMINGS SAND |
| DINA SAND | INV. 7-SPOT & INV. 9-SPOT | 18 | 0 | 07-68 | – | GOLDEN LAKE SOUTH SPARKY SAND |
| PRODUCED WATER | INV. 5-SPOT | 3 | 0 | 04-82 | – | GOLDEN LAKE SOUTH WASECA SAND |
| GLACIAL DRIFT | INV. 7-SPOT | 9 | 0 | 07-82 | – | GOLDEN LAKE SOUTH WASECA SAND |
| SURFACE WATER | INV. 7-SPOT | 13 | 3 | 11-84 | – | LONE ROCK SPARKY SAND |
| SURFACE WATER | – | 0 | 0 | 07-74 | – | MISCELLANEOUS LLOYDMINSTER SAND |
| SURFACE WATER | – | 62 | 3 | 07-81 | – | PIKES PEAK WASECA SAND |
| SPARKY SAND | – | 7 | 3 | 12-85 | 53 | SILVERDALE SPARKY SAND |
| SURFACE WATER | INV. 7-SPOT | 17 | 3 | 02-85 | – | TANGLEFLAGS G.P. SAND |
| | | | | | | **AREA II** |
| BELLY RIVER | INV. 9-SPOT | 11 | 3 | 07-69 | 86 | BUFFALO COULEE BAKKEN SAND |
| BELLY RIVER | INV. 9-SPOT | 17 | 6 | 08-80 | 158 | BUFFALO COULEE BAKKEN SAND |
| BELLY RIVER | INV. 9-SPOT & INV. 5-SPOT | 218 | 96 | 01-59 | 4523 | COLEVILLE BAKKEN |
| BELLY RIVER & DEADWOOD | INV. 9-SPOT | 11 | 1 | 07-85 | 48 | DODSLAND VIKING SAND |
| BELLY RIVER | INV. 5-SPOT | 9 | 0 | 11-85 | 0 | DODSLAND VIKING SAND |
| DUPEROW | INV. 9-SPOT | 33 | 11 | 03-86 | 26 | DODSLAND VIKING SAND |
| BELLY RIVER & DEADWOOD | INV. 9-SPOT | 47 | – | – | – | DODSLAND VIKING SAND |
| DUPEROW | INV. 5-SPOT | 16 | 9 | 03-86 | 12 | KERROBERT VIKING SAND |
| BELLY RIVER | INV. 9-SPOT | 124 | 22 | 02-62 | 594 | SMILEY-DEWAR VIKING |
| BELLY RIVER | INV. 9-SPOT | 32 | 9 | 03-73 | 23 | SMILEY-DEWAR VIKING |
| | | | | | | **AREA III** |
| BELLY RIVER | INV. 9-SPOT | 8 | 1 | 10-71 | 40 | BEVERLEY CANTUAR SAND |
| MANNVILLE | – | 2 | 1 | 07-84 | 22 | JAVA CANTUAR SAND |

# DEVELOPMENT DATA

# DEVELOPMENT DATA - OIL POOLS

| POOL NAME | NATURAL DEPLETION MECHANISM | ENHANCED RECOVERY PROJECTS | SPACING REGULATIONS * | |
|---|---|---|---|---|
| | | | DRAINAGE UNITS, LSDS | TARGET AREA |
| ABERFELDY SPARKY SAND | SOLUTION GAS DRIVE<br>WATER DRIVE<br>PART. GAS CAP DRIVE | WATERFLOOD IN:<br>1: ABERFELDY UNIT (SUSPENDED)<br>2: SOUTH ABERFELDY SPARKY VOLUNTARY UNIT (SUSPENDED)<br>IN-SITU WET COMBUSTION IN:<br>ABERFELDY UNIT<br>STEAMFLOOD IN:<br>ABERFELDY UNIT | 1 | SE 1/4 OF LSD,<br>EXCEPT:<br>A: TWP 49, RGE 26, SEC: NW 1/4 OF 4, N 1/2 OF 5, 8, 9, W 1/2 OF 10, SW 1/4 OF 15, 16, 17, E 1/2 & NW 1/4 OF 18, 20, 21, 28, 29;<br>TWP 48, RGE 27, SEC: N 1/2 OF 35, NW 1/4 OF 36;<br>TWP 49, RGE 27, SEC: 1, 2, 11, 12;<br>WHERE: |
| | | | 1 | NW 1/4 OF LSD.<br>B: TWP 49, RGE 27, SEC: 14, 15, NE 1/4 OF 16, E 1/2 OF 21, 22, 23, 27, 28, 33, 34;<br>WHERE: |
| | | | 1 | NE 1/4 OF LSD. |
| ALAMEDA MIDALE BEDS | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>1: ALAMEDA CENTRAL UNIT<br>2: ALAMEDA EAST UNIT<br>3: NORTH ALAMEDA UNIT<br>4: SOUTH ALAMEDA UNIT | 2 | ODD NUMBERED LSD. |
| ALAMEDA WEST FROBISHER BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| ALAMEDA WEST MIDALE BEDS | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>ALAMEDA WEST VOLUNTARY UNIT NO. 1 | 2 | ODD NUMBERED LSD. |
| ALIDA EAST FROBISHER-ALIDA BEDS | WATER DRIVE | NONE | 1 | CENTER OF LSD,<br>EXCEPT:<br>TWP 5, RGE 33, SEC: 26, 27, 28, S 1/2 OF 33, S 1/2 & NW 1/4 OF 34;<br>TWP 6, RGE 33, SEC: SW 1/4 OF 3;<br>WHERE: |
| | | | 2 | EVEN NUMBERED LSD. |
| ALIDA NORTH ALIDA BEDS | WATER DRIVE | NONE | 1 | CENTER OF LSD. |
| ALIDA WEST FROBISHER-ALIDA BEDS | WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| ALSASK BASAL BLAIRMORE SAND | SOLUTION GAS DRIVE | NONE | 1 | CENTER OF LSD,<br>EXCEPT:<br>TWP 29, RGE 29, SEC: NW 1/4 OF 10, W 1/2 OF 15, SW 1/4 OF 22;<br>WHERE:<br>SEE POOL REGULATIONS CONCERNING PARTIAL DRAINAGE UNITS |
| ANTELOPE LAKE EAST ROSERAY SAND | SOLUTION GAS DRIVE | WATERFLOOD | 2 | ODD NUMBERED LSD. |
| ANTELOPE LAKE UPPER SHAUNAVON | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>ANTELOPE LAKE UPPER SHAUNAVON VOLUNTARY UNIT | 2 | EVEN NUMBERED LSD. |
| ARCOLA FROBISHER-ALIDA BEDS | SOLUTION GAS DRIVE<br>PARTIAL WATER DRIVE | NONE | 2 | ODD NUMBERED LSD,<br>EXCEPT:<br>TWP 8, RGE 3, SEC: NW 1/4 OF 7, 18;<br>TWP 8, RGE 4, SEC: N 1/2 OF 1, NE 1/4 OF 2, 12, 13;<br>WHERE: |
| | | | 1 | CENTRE OF LSD. |
| AUBURNTON FROBISHER-ALIDA BEDS | WATER DRIVE | NONE | 1 | CENTER OF LSD. |
| AVON HILL VIKING | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>AVON HILL VIKING VOLUNTARY UNIT | 1 | CENTER OF LSD. |

## DEVELOPMENT DATA - OIL POOLS

| | | | SPACING REGULATIONS * | |
|---|---|---|---|---|
| POOL NAME | NATURAL DEPLETION MECHANISM | ENHANCED RECOVERY PROJECTS | DRAINAGE UNITS, LSDS | TARGET AREA |
| BALDWINTON SPARKY SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| BATTLE CREEK MADISON | WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| BATTLE CREEK UPPER SHAUNAVON | PARTIAL WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| BATTRUM NORTH ROSERAY SAND | SOLUTION GAS DRIVE | NONE | 1 | CENTER OF LSD. |
| BATTRUM ROSERAY SAND | SOLUTION GAS DRIVE<br>PARTIAL WATER DRIVE | IN-SITU WET COMBUSTION IN:<br>1: BATTRUM UNIT NO. 1<br>2: BATTRUM UNIT NO. 2<br>3: BATTRUM UNIT NO. 3<br>WATERFLOOD IN:<br>1: BATTRUM UNIT NO. 1<br>2: BATTRUM UNIT NO. 3<br>3: BATTRUM UNIT NO. 4 | 1 | CENTER OF LSD,<br>EXCEPT:<br>A: TWP 18, RGE 16, SEC: 30;<br>TWP 18, RGE 17, SEC: 25, 26, E 1/2 OF 27, NE 1/4 OF 33, 34, 35, SE 1/4 & W 1/2 OF 36;<br>WHERE: |
| | | | 2 | EVEN NUMBERED LSD.<br>B: TWP 19, RGE 17, SEC: 1, S 1/2 OF 2;<br>WHERE: |
| | | | 2 | ODD NUMBERED LSD. |
| BENCH UPPER SHAUNAVON | SOLUTION GAS DRIVE | NONE | 4 | NW LSD OF 1/4 SECTION,<br>EXCEPT:<br>TWP 11, RGE 18, SEC: W 1/2 OF 16;<br>WHERE: |
| | | | 4 | NE LSD OF 1/4 SECTION. |
| BENSON MIDALE BEDS | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>1: BENSON UNIT<br>2: BENSON MIDALE VOLUNTARY UNIT NO. 1<br>3: NORTHWEST BENSON MIDALE VOLUNTARY UNIT | 4 | NW LSD OF 1/4 SECTION,<br>EXCEPT:<br>TWP 6, RGE 8, SEC: N 1/2 OF 17, N 1/2 & SE 1/4 OF 18, 19, 20, W 1/2 OF 21, SW 1/4 OF 28, SW 1/4 OF 29, S 1/2 & NW 1/4 OF 30, W 1/2 OF 31;<br>TWP 6, RGE 9, SEC: SW 1/4 & NE 1/4 OF 13, NW 1/4 OF 15, 16, E 1/2 OF 17, W 1/2 OF 19, E 1/2 OF 20, 21, W 1/2 & NE 1/4 OF 22, W 1/2 & NE 1/4 OF 23, 24 TO 29 INCLUSIVE, S 1/2 OF 30, 36;<br>TWP 6, RGE 10, SEC: E 1/2 OF 24, SE 1/4 OF 25;<br>WHERE: |
| | | | 2 | ODD NUMBERED LSD. |
| BEVERLEY CANTUAR SAND | SOLUTION GAS DRIVE | PILOT WATERFLOOD | 2 | EVEN NUMBERED LSD. |
| BEVERLEY NORTH CANTUAR SAND | SOLUTION GAS DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| BEVERLEY UPPER ROSERAY SAND | SOLUTION GAS DRIVE<br>GAS CAP DRIVE | WATERFLOOD IN:<br>BEVERLEY UNIT NO. 1 | 1 | CENTER OF LSD. |
| BIENFAIT MIDALE BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| BIG GULLY MCLAREN SAND | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>BIG GULLY VOLUNTARY UNIT NO. 1 (SUSPENDED) | 1 | NW 1/4 OF LSD,<br>EXCEPT:<br>TWP 50, RGE 25, SEC: NE 1/4 OF 7, N 1/2 OF 8, SW 1/4 OF 17, SE 1/4 OF 18;<br>WHERE: |
| | | | 1 | NE 1/4 OF LSD. |
| BIG GULLY WASECA SAND | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>BIG GULLY VOLUNTARY UNIT NO. 1 (SUSPENDED) | 1 | NW 1/4 OF LSD,<br>EXCEPT:<br>TWP 50, RGE 25, SEC: NE 1/4 OF 7, N 1/2 OF 8, SW 1/4 OF 17, SE 1/4 OF 18;<br>WHERE: |
| | | | 1 | NE 1/4 OF LSD. |
| BONE CREEK UPPER SHAUNAVON | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>BONE CREEK UNIT | 2 | EVEN NUMBERED LSD,<br>EXCEPT:<br>TWP 11, RGE 19, SEC: W 1/2 OF 2, 3, E 1/2 OF 4;<br>WHERE: |
| | | | 2 | ODD NUMBERED LSD. |

## DEVELOPMENT DATA - OIL POOLS

| POOL NAME | NATURAL DEPLETION MECHANISM | ENHANCED RECOVERY PROJECTS | SPACING REGULATIONS * | |
|---|---|---|---|---|
| | | | DRAINAGE UNITS, LSDS | TARGET AREA |
| BROMHEAD MIDALE BEDS | SOLUTION GAS DRIVE | NONE | 4 | NW LSD OF 1/4 SECTION. |
| BROWNING FROBISHER-ALIDA BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| BRYANT FROBISHER BEDS | SOLUTION GAS DRIVE | NONE | 4 | NW LSD OF 1/4 SECTION. |
| BRYANT MIDALE BEDS | SOLUTION GAS DRIVE | NONE | 4 | NW LSD OF 1/4 SECTION. |
| BUFFALO COULEE BAKKEN SAND | SOLUTION GAS DRIVE | WATERFLOOD | 1/2 | NE & SW 1/4 OF LSD. |
| BUFFALO COULEE NORTH BAKKEN SAND | SOLUTION GAS DRIVE | NONE | 1 | SW 1/4 OF LSD. |
| BUTTE UPPER SHAUNAVON | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>BUTTE VOLUNTARY UNIT | 2 | ODD NUMBERED LSD. |
| BUZZARD LLOYDMINSTER SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| CACTUS LAKE BASAL MANNVILLE-BAKKEN SAND | SOLUTION GAS DRIVE | NONE | 1 | CENTER OF LSD. |
| CANTAL FROBISHER-ALIDA BEDS | WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD,<br>EXCEPT:<br>TWP 5, RGE 33, SEC: 19, 20, 29, 30;<br>WHERE: |
| | | | 1 | CENTER OF LSD. |
| CANTAL SOUTH FROBISHER-ALIDA BEDS | WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| CANTUAR EAST CANTUAR SAND | SOLUTION GAS DRIVE<br>GAS CAP DRIVE | WATERFLOOD IN:<br>EAST CANTUAR UNIT NO. 1<br>GAS STORAGE IN:<br>EAST CANTUAR GAS UNIT | 2 | SW 1/4 OF EVEN LSD. |
| CANTUAR EAST ROSERAY SAND | SOLUTION GAS DRIVE<br>GAS CAP DRIVE | WATERFLOOD IN:<br>1: EAST CANTUAR UNIT NO. 1<br>2: EAST CANTUAR UNIT NO. 2<br>GAS STORAGE IN:<br>EAST CANTUAR GAS UNIT | 2 | SW 1/4 OF EVEN LSD. |
| CANTUAR LOWER ROSERAY SAND | WATER DRIVE | NONE | 1 | SW 1/4 OF LSD. |
| CANTUAR MAIN CANTUAR SAND | SOLUTION GAS DRIVE<br>GAS CAP DRIVE | WATERFLOOD IN:<br>CANTUAR UNIT | 1 | SW 1/4 OF LSD. |
| CARNDUFF FROBISHER BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD,<br>EXCEPT:<br>TWP 3, RGE 33, SEC: W 1/2 OF 5, 6;<br>TWP 3, RGE 34, SEC: 1, 2, 3, 4, 9, 10, 11, W 1/2 OF 12, W 1/2 OF 14, 15, 16;<br>WHERE: |
| | | | 2 | EVEN NUMBERED LSD. |
| CARNDUFF MIDALE BEDS | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>1: WEST CARNDUFF UNIT<br>2: EAST CARNDUFF UNIT<br>3: CARNDUFF VOLUNTARY UNIT NO. 1<br>4: CARNDUFF SOUTH MIDALE VOLUNTARY UNIT | 2 | ODD NUMBERED LSD,<br>EXCEPT:<br>TWP 3, RGE 33, SEC: NE 1/4 & W 1/2 OF 4, 5, 6, 7, 8, 9, 16, 17, S 1/2 OF 18;<br>TWP 3, RGE 34, SEC: 1, 2, 3, 4, 11, 12, S 1/2 OF 13;<br>WHERE: |
| | | | 2 | EVEN NUMBERED LSD. |
| CELTIC G.P. SAND | SOLUTION GAS DRIVE | PILOT INTERMITTENT STEAM INJECTION | 1 | SE 1/4 OF LSD. |
| CELTIC MANNVILLE SANDS | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| CELTIC SPARKY SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |

# DEVELOPMENT DATA - OIL POOLS

| POOL NAME | NATURAL DEPLETION MECHANISM | ENHANCED RECOVERY PROJECTS | SPACING REGULATIONS * | |
|---|---|---|---|---|
| | | | DRAINAGE UNITS, LSDS | TARGET AREA |
| CELTIC WASECA SAND | SOLUTION GAS DRIVE | PILOT INTERMITTENT STEAM INJECTION | 1 | SE 1/4 OF LSD. |
| CLARILAW FROBISHER-ALIDA BEDS | SOLUTION GAS DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| CLARILAW WEST FROBISHER-ALIDA BEDS | WATER DRIVE | NONE | 1 | CENTER OF LSD. |
| CLINTONVILLE SHAUNAVON | SOLUTION GAS DRIVE | NONE | 4 | NW LSD OF 1/4 SECTION. |
| COLEVILLE BAKKEN SAND | SOLUTION GAS DRIVE | WATERFLOOD | 1/2 | NE & SW 1/4 OF LSD. |
| COLEVILLE MANNVILLE SAND | SOLUTION GAS DRIVE | NONE | 1 | SW 1/4 OF LSD. |
| COLEVILLE SOUTH BAKKEN SAND | SOLUTION GAS DRIVE | NONE | 1 | NE 1/4 OF LSD. |
| COLEVILLE SOUTH MANNVILLE SAND | SOLUTION GAS DRIVE | NONE | 1 | NE 1/4 OF LSD. |
| COSINE LAKE LLOYDMINSTER SAND | GAS CAP DRIVE | NONE | 1 | SE 1/4 OF LSD.<br>EXCEPT:<br>TWP 37, RGE 28, SEC: LSDS 4,5,12 & 13 OF 7, LSDS 4,5,12 & 13 OF 18, LSDS 4,5,12 & 13 OF 19;<br>TWP 37, RGE 29, SEC: LSDS 1,8,9 & 16 OF 12, LSDS 1,8,9 & 16 OF 13, LSDS 1,8,9 & 16 OF 24;<br>WHERE:<br>SEE POOL REGULATIONS REGARDING PARTIAL LEGAL SUBDIVISIONS. |
| COURT BAKKEN SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| COVINGTON UPPER SHAUNAVON | SOLUTION GAS DRIVE<br>PARTIAL WATER DRIVE | WATERFLOOD IN:<br>COVINGTON UNIT NO 1 | 2 | EVEN NUMBERED LSD. |
| COVINGTON WEST UPPER SHAUNAVON | SOLUTION GAS DRIVE | NONE | 4 | NE LSD OF 1/4 SECTION. |
| CRYSTAL HILL SOURIS VALLEY BEDS | WATER DRIVE | NONE | 4 | CENTER OF 1/4 SECTION. |
| DALESBORO FROBISHER-ALIDA BEDS | PROBABLE WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| DEE VALLEY EAST SPARKY SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| DEE VALLEY EAST WASECA SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| DEE VALLEY WASECA SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| DELTA UPPER SHAUNAVON | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>1: DELTA UNIT NO. 1<br>2: DELTA UNIT NO. 2<br>3: DELTA VOL. UNIT NO. 3 | 2 | EVEN NUMBERED LSD. |
| DODSLAND VIKING SAND | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>1: EAGLE LAKE VIKING VOLUNTARY UNIT<br>2: EAST DODSLAND VIKING VOLUNTARY UNIT<br>3: GLENEATH SOUTH VIKING VOLUNTARY UNIT<br>4: GLENEATH UNIT<br>5: KIYIU LAKE VIKING VOLUNTARY UNIT<br>6: NORTH DODSLAND VIKING VOLUNTARY UNIT | 1 | CENTER OF LSD. |

# DEVELOPMENT DATA - OIL POOLS

| POOL NAME | NATURAL DEPLETION MECHANISM | ENHANCED RECOVERY PROJECTS | SPACING REGULATIONS * DRAINAGE UNITS, LSDS | SPACING REGULATIONS * TARGET AREA |
|---|---|---|---|---|
| DOLLARD UPPER SHAUNAVON | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>1: DOLLARD UNIT<br>2: EAST DOLLARD VOLUNTARY UNIT | 2 | ODD NUMBERED LSD,<br>EXCEPT:<br>TWP 7, RGE 19, SEC: N 1/2 OF 8, W 1/2 OF 16, 17, E 1/2 OF 18;<br>TWP 7, RGE 20, SEC: S 1/2 OF 10, NE 1/4 OF 19, SW 1/4 OF 20, NW 1/4 OF 27, N 1/2 OF 28, SE 1/4 OF 30;<br>WHERE: |
| | | | 4 | NW LSD OF 1/4 SECTION. |
| DRUID MANNVILLE SANDS | SOLUTION GAS DRIVE | NONE | 1 | CENTER OF LSD. |
| DULWICH SPARKY SAND | SOLUTION GAS DRIVE | NONE | 1/4 | EACH QUADRANT OF LSD. |
| DULWICH NORTH SPARKY SAND | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>NORTH DULWICH VOLUNTARY UNIT (SUSPENDED) | 1/2 | NE & SW 1/4 OF LSD. |
| EASTBROOK UPPER SHAUNAVON | SOLUTION GAS DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| EASTEND SHAUNAVON | SOLUTION GAS DRIVE | NONE | 2 | EVEN NUMBERED LSD,<br>EXCEPT:<br>TWP 6, RGE 19, SEC: 5, 6, 7, 8, W 1/2 OF 18;<br>TWP 6, RGE 20, SEC: E 1/2 OF 1;<br>WHERE: |
| | | | 4 | NW LSD IN 1/4 SECTION. |
| EAST PINTO FROBISHER BEDS | PROBABLE WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| EAST PINTO MIDALE BEDS | SOLUTION GAS DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| EDAM WASECA SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| EDAM WEST SPARKY/G.P. SAND | SOLUTION GAS DRIVE | NONE | 1/2 | NW & SE 1/4 OF LSD. |
| EDAM WEST MANNVILLE SAND | SOLUTION GAS DRIVE | NONE | 1/2 | NW & SE 1/4 OF LSD. |
| EDAM WEST WASECA SAND | SOLUTION GAS DRIVE | NONE | 1/2 | NW & SE 1/4 OF LSD. |
| EDENVALE TILSTON BEDS | PARTIAL WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| ELMORE FROBISHER BEDS | SOLUTION GAS DRIVE<br>PARTIAL WATER DRIVE | WATERFLOOD IN:<br>ELMORE FROBISHER BEDS VOLUNTARY UNIT NO. 1 | 2 | ODD NUMBERED LSD. |
| ELMORE MIDALE BEDS | SOLUTION GAS DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| EPPING G.P. SAND | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>SOUTH EPPING UNIT NO. 1 | 1 | SE 1/4 OF LSD,<br>EXCEPT:<br>A: TWP 47, RGE 27, SEC: S 1/2 & NW 1/4 OF 31, SW 1/4 OF 32;<br>TWP 48, RGE 27, SEC: SW 1/4 OF 6;<br>TWP 47, RGE 28, SEC: N 1/2 OF 25, 34, 35, 36;<br>TWP 48, RGE 28, SEC: S 1/2 OF 1, S 1/2 OF 2;<br>WHERE: |
| | | | 1 | NW 1/4 OF LSD.<br>B: TWP 47, RGE 27, SEC: W 1/2 OF 17, 18, 19, 20, S 1/2 & NW 1/4 OF 29, 30;<br>WHERE: |
| | | | 1/2 | NW & SE 1/4 OF LSD. |

## DEVELOPMENT DATA - OIL POOLS

| POOL NAME | NATURAL DEPLETION MECHANISM | ENHANCED RECOVERY PROJECTS | SPACING REGULATIONS * | |
|---|---|---|---|---|
| | | | DRAINAGE UNITS, LSDS | TARGET AREA |
| EPPING SPARKY SAND | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>1: SOUTH EPPING UNIT NO. 1<br>2: SOUTH WEST EPPING SPARKY VOLUNTARY UNIT NO. 1 | 1<br>1/2 | SE 1/4 OF LSD,<br>EXCEPT:<br>TWP 47, RGE 27, SEC: W 1/2 OF 17, 18, 19, 20, W 1/2 & SE 1/4 OF 29, 30, W 1/2 & SE 1/4 OF 31, SW 1/4 OF 32;<br>TWP 48, RGE 27, SEC: SW 1/4 OF 6;<br>TWP 47, RGE 28, SEC: N 1/2 OF 25, 34, 35, 36;<br>TWP 48, RGE 28, SEC: S 1/2 OF 1, S 1/2 OF 2, SE 1/4 OF 3;<br>WHERE:<br>NW & SE 1/4 OF LSD. |
| EUREKA VIKING | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>1: NORTH EUREKA UNIT<br>2: SOUTH EUREKA UNIT | 1 | CENTER OF LSD. |
| EYEHILL CUMMINGS SAND | SOLUTION GAS DRIVE<br>PARTIAL WATER DRIVE | PILOT IN-SITU DRY COMBUSTION | 1 | CENTER OF LSD. |
| FERTILE TILSTON BEDS | WATER DRIVE | NONE | 1 | CENTER OF LSD. |
| FERTILE TILSTON-SOURIS VALLEY BEDS | WATER DRIVE | NONE | 1 | CENTER OF LSD. |
| FLAT LAKE RATCLIFFE BEDS | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>FLAT LAKE RATCLIFFE VOLUNTARY UNIT NO. 1 | 4 | SW LSD IN 1/4 SECTION,<br>EXCEPT:<br>TWP 1, RGE 16, SEC: S 1/2 OF 1, S 1/2 OF 2, S 1/2 OF 3, S 1/2 OF 5, S 1/2 OF 6;<br>WHERE:<br>WELLS LOCATED A MINIMUM DISTANCE OF 1600 FEET FROM U.S. BORDER. |
| FLORENCE FROBISHER BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| FOREST BANK MANNVILLE SANDS | SOLUTION GAS DRIVE | NONE | 1<br>1<br>1 | SW 1/4 OF LSD,<br>EXCEPT:<br>A: TWP 48, RGE 24, SEC: 32;<br>TWP 49, RGE 24, SEC: 6;<br>WHERE:<br>SE 1/4 OF LSD.<br>B: TWP 49, RGE 24, SEC: 7, 18;<br>TWP 49, RGE 25, SEC: 12, 13;<br>WHERE:<br>NE 1/4 OF LSD. |
| FOREST BANK SPARKY SAND | SOLUTION GAS DRIVE | NONE | 1 | SW 1/4 OF LSD,<br>EXCEPT:<br>SEE FOREST BANK MANNVILLE SANDS. |
| FOREST BANK WASECA SAND | SOLUTION GAS DRIVE | NONE | 1 | SW 1/4 OF LSD,<br>EXCEPT:<br>SEE FOREST BANK MANNVILLE SANDS. |
| FORGAN VIKING SAND | SOLUTION GAS DRIVE | NONE | 1 | CENTRE OF LSD. |
| FOSTERTON ROSERAY SAND | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>1: FOSTERTON MAIN UNIT<br>2: FOSTERTON NORTHWEST UNIT (SUSPENDED)<br>3: WEST FOSTERTON VOLUNTARY UNIT<br>IN-SITU WET COMBUSTION IN:<br>FOSTERTON NORTHWEST UNIT | 1<br>1 | SW 1/4 OF LSD,<br>EXCEPT:<br>TWP 17, RGE 18, SEC: 4, E 1/2 OF 5, E 1/2 OF 8, 9, LSDS 1,2,3,4,8,9 & 16 OF 16, LSDS 1 & 2 OF 17;<br>WHERE:<br>CENTER OF LSD. |
| FOSTERTON SOUTH CANTUAR SAND | SOLUTION GAS DRIVE | NONE | 1 | CENTER OF LSD. |
| FOSTERTON SOUTH ROSERAY SAND | SOLUTION GAS DRIVE | NONE | 1 | CENTER OF LSD. |

## DEVELOPMENT DATA - OIL POOLS

| POOL NAME | NATURAL DEPLETION MECHANISM | ENHANCED RECOVERY PROJECTS | SPACING REGULATIONS * DRAINAGE UNITS, LSDS | TARGET AREA |
|---|---|---|---|---|
| FREDA LAKE RATCLIFFE BEDS | SOLUTION GAS DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| FREEMONT SPARKY SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| FREEMONT WASECA SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| FREESTONE FROBISHER-ALIDA BEDS | WATER DRIVE | NONE | 1 | CENTRE OF LSD. |
| FRYS EAST TILSTON-SOURIS VALLEY BEDS | WATER DRIVE | NONE | 1 | CENTRE OF LSD. |
| FRYS TILSTON-SOURIS VALLEY BEDS | WATER DRIVE | NONE | 1 | CENTRE OF LSD. |
| FURNESS SPARKY SAND | SOLUTION GAS DRIVE | NONE | 1/4 | CENTER OF EACH 1/4 LSD. |
| FUSILIER BAKKEN SAND | SOLUTION GAS DRIVE<br>GAS CAP DRIVE | NONE | 1 | CENTER OF LSD. |
| GAINSBOROUGH FROBISHER-ALIDA BEDS | SOLUTION GAS DRIVE | WATERFLOOD IN: GAINSBOROUGH FROBISHER-ALIDA VOLUNTARY UNIT | 2 | ODD NUMBERED LSD. |
| GLEN EWEN FROBISHER BEDS | PROBABLE WATER DRIVE | NONE | 4 | SE LSD OF 1/4 SECTION. |
| GLEN EWEN MIDALE BEDS | SOLUTION GAS DRIVE | WATERFLOOD IN: GLEN EWEN UNIT | 2 | ODD NUMBERED LSD,<br>EXCEPT:<br>A: TWP 2, RGE 1, SEC: N 1/2 OF 26, 32, S 1/2 OF 33, S 1/2 & NW 1/4 OF 34, SE 1/4 OF 35;<br>TWP 3, RGE 1, SEC: NW 1/4 OF 8, N 1/2 OF 10, N 1/2 OF 11, NE 1/4 OF 12, S 1/2 OF 13, W 1/2 OF 15, SE 1/4 OF 16, W 1/2 & NE 1/4 OF 20, W 1/2 OF 22;<br>WHERE: |
| | | | 4 | SE LSD OF 1/4 SECTION.<br>B: TWP 2, RGE 1, SEC: LSD 1,2,3,4 OF SECTIONS 1 TO 5 INCLUSIVE;<br>WHERE:<br>SEE POOL REGULATIONS REGARDING PARTIAL LEGAL SUBDIVISIONS. |
| GOLDEN LAKE NORTH SPARKY SAND | SOLUTION GAS DRIVE | WATERFLOOD IN: GOLDEN LAKE VOLUNTARY UNIT (SUSPENDED) | 1 | SE 1/4 OF LSD,<br>EXCEPT:<br>TWP 48, RGE 23, SEC: 19, 29, 30, E 1/2 & SW 1/4 OF 31, 32;<br>TWP 48, RGE 24, SEC: NE 1/4 OF 24, SE 1/4 OF 25;<br>WHERE: |
| | | | 1 | SW 1/4 OF LSD. |
| GOLDEN LAKE NORTH WASECA SAND | SOLUTION GAS DRIVE | WATERFLOOD IN: GOLDEN LAKE VOLUNTARY UNIT (SUSPENDED) | 1 | SE 1/4 OF LSD,<br>EXCEPT:<br>TWP 48, RGE 23, SEC: 19, 29, 30, E 1/2 & SW 1/4 OF 31, 32;<br>TWP 48, RGE 24, SEC: NE 1/4 OF 24, SE 1/4 OF 25;<br>WHERE: |
| | | | 1 | SW 1/4 OF LSD. |
| GOLDEN LAKE SOUTH SPARKY SAND | SOLUTION GAS DRIVE | PILOT IN-SITU WET COMBUSTION | 1 | SE 1/4 OF LSD. |
| GOLDEN LAKE SOUTH WASECA SAND | SOLUTION GAS DRIVE | TWO IN-SITU WET COMBUSTION PILOT PROJECTS-OXYGEN ENRICHED | 1 | SE 1/4 OF LSD. |
| GRIFFIN FROBISHER BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| GULL LAKE BASAL CANTUAR SAND | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>1: JOHNSTON UNIT<br>2: GULL LAKE CANTUAR VOLUNTARY UNIT NO. 1 | 1 | SE 1/4 OF LSD. |

## DEVELOPMENT DATA - OIL POOLS

| POOL NAME | NATURAL DEPLETION MECHANISM | ENHANCED RECOVERY PROJECTS | SPACING REGULATIONS * DRAINAGE UNITS, LSDS | SPACING REGULATIONS * TARGET AREA |
|---|---|---|---|---|
| GULL LAKE CENTRAL UPPER SHAUNAVON | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>GULL LAKE UPPER SHAUNAVON VOLUNTARY UNIT NO. 1 | 2 | SE 1/4 OF EVEN LSD. |
| GULL LAKE NORTH UPPER SHAUNAVON | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>GULL LAKE NORTH SHAUNAVON UNIT | 1 | SE 1/4 OF LSD. |
| GULL LAKE SOUTH UPPER SHAUNAVON | SOLUTION GAS DRIVE | WATERFLOOD IN<br>GULL LAKE SOUTH VOLUNTARY UNIT NO. 1 | 4 | SW LSD OF 1/4 SECTION,<br>EXCEPT:<br>TWP 12, RGE 19, SEC: N 1/2 OF 14, N 1/2 OF 15, NE 1/4 OF 21, 22, 23, N 1/2 & SW 1/4 OF 24, SW 1/4 OF 26, S 1/2 OF 27, SE 1/4 OF 28;<br>WHERE: |
|  |  |  | 4 | NE LSD OF 1/4 SECTION. |
| GULLY LAKE WASECA SAND | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>GULLY LAKE WASECA VOLUNTARY UNIT | 1 | SE 1/4 OF LSD. |
| HANDSWORTH ALIDA BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| HARTAVEN FROBISHER-ALIDA BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| HASTINGS EAST FROBISHER BEDS | SOLUTION GAS DRIVE<br>PARTIAL WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| HASTINGS FROBISHER BEDS | SOLUTION GAS DRIVE<br>WATER DRIVE | WATERFLOOD IN:<br>1: HASTINGS FROBISHER UNIT<br>2: HASTINGS VOLUNTARY UNIT NO. 1<br>3: HASTINGS VOLUNTARY UNIT NO. 2 | 2 | EVEN NUMBERED LSD,<br>EXCEPT:<br>A: TWP 3, RGE 1, SEC: 25, 36;<br>WHERE: |
|  |  |  | 2 | ODD NUMBERED LSD.<br>B: TWP 3, RGE 33, SEC: LSDS 13,14 & NE 1/4 OF 31;<br>TWP 4, RGE 33, SEC: LSDS 1,2,5,6 & N 1/2 OF 6, LSDS 3,4,5 & SE 1/4 OF 7;<br>TWP 4, RGE 34, SEC: LSDS 13,14 & NE 1/4 OF 1, NE 1/4 OF 9, N 1/2 OF 10, LSDS 5,6,7,8 & N 1/2 OF 11, LSDS 9,10 & S 1/2 OF 12, LSDS 1,2 & W 1/2 OF 14, N 1/2 & SW 1/4 OF 15, 16, SE 1/4 OF 21, S 1/2 & NE 1/4 OF 22, LSDS 3 & 4 OF 23;<br>TWP 4, RGE 1, SEC: LSDS 7,8 & N 1/2 OF 12, LSDS 11,12, NE 1/4 & S 1/2 OF 13, LSDS 7 & 8 OF 14, SE 1/4 OF 24;<br>WHERE: |
|  |  |  | 1 | CENTER OF LSD.<br>C: TWP 3, RGE 34, SEC: W 1/2 OF 27, 28, 33, W 1/2 OF 34;<br>TWP 4, RGE 34, SEC: W 1/2 OF 3, 4, SE 1/4 OF 9, SW 1/4 OF 10, NE 1/4 OF 21, NW 1/4 OF 22, W 1/2 OF 27, 28, 33, W 1/2 OF 34;<br>WHERE:<br>SEE MRO 138/84 A 97 RE FRACTIONAL DRAINAGE UNITS. |
| HAZELWOOD TILSTON BEDS | WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| HAZLET ROSERAY SAND | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>HAZLET UNIT | 2 | EVEN NUMBERED LSD. |
| HEARTS HILL BAKKEN SAND | SOLUTION GAS DRIVE | NONE | 1 | CENTER OF LSD. |
| HOFFER RATCLIFFE LOWER BEDS | SOLUTION GAS DRIVE | NONE | 4 | SE LSD OF 1/4 SECTION,<br>EXCEPT:<br>TWP 1, RGE 15, SEC: 28, 29, S 1/2 OF 32 S 1/2 OF 33;<br>WHERE: |
|  |  |  | 4 | SW LSD OF 1/4 SECTION. |

## DEVELOPMENT DATA - OIL POOLS

| | NATURAL DEPLETION MECHANISM | ENHANCED RECOVERY PROJECTS | SPACING REGULATIONS * | |
|---|---|---|---|---|
| POOL NAME | | | DRAINAGE UNITS, LSDS | TARGET AREA |
| HOFFER RATCLIFFE UPPER BEDS | SOLUTION GAS DRIVE | NONE | 4 | SE LSD OF 1/4 SECTION,<br>EXCEPT:<br>TWP 1, RGE 15, SEC: 28, 29, S 1/2 OF 32<br>S 1/2 OF 33;<br>WHERE: |
| | | | 4 | SW LSD OF 1/4 SECTION. |
| HOOSIER BAKKEN SAND | SOLUTION GAS DRIVE<br>GAS CAP DRIVE | WATERFLOOD IN:<br>HOOSIER BAKKEN SAND VOLUNTARY UNIT NO. 1 | 1 | CENTER OF LSD. |
| HUME FROBISHER BEDS | PROBABLE WATER DRIVE | NONE | 4 | NW LSD OF 1/4 SECTION. |
| HUME MIDALE BEDS | SOLUTION GAS DRIVE | NONE | 4 | NW LSD OF 1/4 SECTION,<br>EXCEPT:<br>TWP 7, RGE 12, SEC: 31, W 1/2 OF 32;<br>TWP 8, RGE 12, SEC: N 1/2 OF 3, SE 1/4 OF 4, S 1/2 OF 5, S 1/2 OF 6;<br>WHERE: |
| | | | 2 | ODD NUMBERED LSD. |
| HUMMINGBIRD BIRDBEAR | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| HUMMINGBIRD RATCLIFFE BEDS | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>HUMMINGBIRD RATCLIFFE VOLUNTARY UNIT NO. 1 | 2 | ODD NUMBERED LSD. |
| HUNTOON FROBISHER BEDS | WATER DRIVE | NONE | 4 | SE LSD IN 1/4 SECTION,<br>EXCEPT:<br>TWP 6, RGE 9, SEC: N 1/2 OF 30, 31, 32, 33, 34;<br>TWP 7, RGE 9, SEC: W 1/2 OF 2, 3, 4, E 1/2 OF 5, 10;<br>TWP 6, RGE 10, SEC: N 1/2 OF 25, NE 1/4 OF 26, E 1/2 OF 33, 34, 35, 36;<br>TWP 7, RGE 10, SEC: 4;<br>WHERE: |
| | | | 2 | ODD NUMBERED LSD. |
| HUNTOON MIDALE BEDS | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>HUNTOON MIDALE BEDS VOLUNTARY UNIT NO. 1 | 4 | SE LSD IN 1/4 SECTION,<br>EXCEPT:<br>SEE HUNTOON FROBISHER BEDS POOL. |
| ILLERBRUN UPPER SHAUNAVON | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>ILLERBRUN VOLUNTARY UNIT | 4 | SE LSD IN 1/4 SECTION. |
| INGOLDSBY FROBISHER-ALIDA BEDS | WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| INGOLDSBY WEST FROBISHER-ALIDA BEDS | WATER DRIVE | NONE | 1 | CENTRE OF LSD. |
| INNES FROBISHER BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| INSTOW UPPER SHAUNAVON | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>1: INSTOW UNIT<br>2: INSTOW SOUTH UPPER SHAUNAVON VOLUNTARY UNIT | 2 | ODD NUMBERED LSD. |
| JAVA CANTUAR SAND | SOLUTION GAS DRIVE | WATERFLOOD | 2 | ODD NUMBERED LSD. |
| JOHNSTON UPPER SHAUNAVON | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| KENOSEE TILSTON BEDS | WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| KERROBERT VIKING SAND | SOLUTION GAS DRIVE | WATERFLOOD | 1 | CENTER OF LSD. |
| KISBEY BIRDBEAR | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| LAKE ALMA RATCLIFFE BEDS | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>LAKE ALMA VOLUNTARY UNIT | 2 | EVEN NUMBERED LSD. |

# DEVELOPMENT DATA - OIL POOLS

| POOL NAME | NATURAL DEPLETION MECHANISM | ENHANCED RECOVERY PROJECTS | SPACING REGULATIONS * | |
|---|---|---|---|---|
| | | | DRAINAGE UNITS, LSDS | TARGET AREA |
| LANDROSE MCLAREN SAND | SOLUTION GAS DRIVE | NONE | 1 | NE 1/4 OF LSD,<br>EXCEPT:<br>TWP 50, RGE 25, SEC: W 1/2 OF 6, W 1/2 OF 7, SW 1/4 OF 18;<br>TWP 50 RGE 26, SEC: E 1/2 & NW 1/4 OF 1, 12, S 1/2 OF 13;<br>WHERE: |
| | | | 1/2 | NE & SW 1/4 OF LSD. |
| LANDROSE WASECA SAND | SOLUTION GAS DRIVE | NONE | 1 | NE 1/4 OF LSD,<br>EXCEPT:<br>TWP 50, RGE 25, SEC: W 1/2 OF 6, W 1/2 OF 7, SW 1/4 OF 18;<br>TWP 50 RGE 26, SEC: E 1/2 & NW 1/4 OF 1, 12, S 1/2 OF 13;<br>WHERE: |
| | | | 1/2 | NE & SW 1/4 OF LSD. |
| LASHBURN SOUTH SPARKY SAND | SOLUTION GAS DRIVE | NONE | 1 | SW 1/4 OF LSD,<br>EXCEPT:<br>TWP 48, RGE 23, SEC: 18;<br>TWP 48, RGE 24, SEC: NW 1/4 OF 14, NE 1/4 OF 15, E 1/2 OF 22, 23;<br>WHERE: |
| | | | 1 | SE 1/4 OF LSD. |
| LASHBURN SOUTH WASECA SAND | SOLUTION GAS DRIVE | NONE | 1 | SW 1/4 OF LSD,<br>EXCEPT:<br>SEE LASHBURN SOUTH SPARKY SAND POOL. |
| LASHBURN WASECA SAND | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>LASHBURN WASECA VOLUNTARY UNIT (SUSPENDED) | 1 | SW 1/4 OF LSD. |
| LASHBURN WEST SPARKY SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| LEITCHVILLE SHAUNAVON | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>LEITCHVILLE SHAUNAVON VOLUNTARY UNIT | 4 | SW LSD OF 1/4 SECTION,<br>EXCEPT:<br>TWP 8, RGE 18, SEC: N 1/2 OF 31, N 1/2 OF 32<br>TWP 9, RGE 18, SEC: W 1/2 OF 4, 5, 6, 7, 8, 9, W 1/2 OF 10, S 1/2 & NW 1/4 OF 16, 17, 18, S 1/2 OF 19, S 1/2 OF 20;<br>WHERE: |
| | | | 2 | EVEN NUMBERED LSD. |
| LEON LAKE SHAUNAVON | SOLUTION GAS DRIVE | PILOT WATERFLOOD | 4 | SE LSD OF 1/4 SECTION. |
| LIGHTNING TILSTON BEDS | WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| LLOYDMINSTER SPARKY SAND | SOLUTION GAS DRIVE | NONE | 1/2 | NW & SE 1/4 OF LSD,<br>EXCEPT:<br>SPECIAL PROVISIONS FOR PARTIAL LSD. |
| LONE ROCK SPARKY SAND | SOLUTION GAS DRIVE | PILOT STEAMFLOOD | 1/4 | CENTER OF EACH 1/4 LSD. |
| LOST HORSE HILL FROBISHER-ALIDA BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD,<br>EXCEPT:<br>TWP 9, RGE 8, SEC: LSDS 5,6,7,8,11,12 & NE 1/4 OF 32, LSDS 13,14,15, & 16 OF 33;<br>TWP 10, RGE 8, SEC: LSDS 5,6 & NW 1/4 OF 3, LSDS 11, 12 & S 1/2 & NE 1/4 OF 4, LSDS 3 & 4 OF 10, 11, 12, SW 1/4 OF 13, S 1/2 OF 14, SE 1/4 OF 15;<br>WHERE: |
| | | | 1 | CENTER OF LSD. |

# DEVELOPMENT DATA - OIL POOLS

| POOL NAME | NATURAL DEPLETION MECHANISM | ENHANCED RECOVERY PROJECTS | SPACING REGULATIONS * | |
|---|---|---|---|---|
| | | | DRAINAGE UNITS, LSDS | TARGET AREA |
| LOUGHEED MIDALE BEDS | SOLUTION GAS DRIVE | NONE | 2 | ODD NUMBERED LSD,<br>EXCEPT:<br>TWP 6. RGE 14, SEC: N 1/2 OF 20, 29, 32;<br>WHERE: |
| | | | 2 | EVEN NUMBERED LSD. |
| LOVERNA DETRITAL | SOLUTION GAS DRIVE | NONE | 1 | CENTER OF LSD. |
| LOW LAKE WASECA SAND | SOLUTION GAS DRIVE | NONE | 1/2 | NE & SW 1/4 OF LSD. |
| LUCKY HILLS VIKING | SOLUTION GAS DRIVE<br>GAS CAP DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| LUSELAND BAKKEN SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| MACKLIN SPARKY SAND | SOLUTION GAS DRIVE | NONE | 1 | CENTER OF LSD. |
| MACOUN MIDALE BEDS | PARTIAL WATER DRIVE | NONE | 4 | NW LSD OF 1/4 SECTION. |
| MACOUN WEST MIDALE BEDS | PROBABLE WATER DRIVE | NONE | 4 | NW LSD OF 1/4 SECTION. |
| MAIDSTONE MCLAREN SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| MAIDSTONE WASECA SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| MAIN SUCCESS ROSERAY SAND | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>SUCCESS MAIN UNIT | 1 | SW 1/4 OF LSD. |
| MANITO LAKE SPARKY SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| MARSDEN SOUTH SPARKY SAND | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>MARSDEN SOUTH SPARKY SAND VOLUNTARY UNIT NO. 1 | 1 | SE 1/4 OF LSD. |
| MARSDEN SPARKY SAND | SOLUTION GAS DRIVE | NONE | 1/4 | CENTER OF EACH 1/4 LSD. |
| MELROSE FROBISHER-ALIDA BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| MIDALE CENTRAL FROBISHER BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| MIDALE CENTRAL MIDALE BEDS | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>MIDALE UNIT<br>PILOT CARBON DIOXIDE FLOOD IN:<br>MIDALE UNIT | 2 | ODD NUMBERED LSD. |
| MINARD MIDALE BEDS | SOLUTION GAS DRIVE | NONE | 4 | NW LSD OF 1/4 SECTION. |
| MOOSE MOUNTAIN TILSTON BEDS | WATER DRIVE | NONE | 1 | CENTER OF LSD. |
| MOOSE VALLEY TILSTON BEDS | WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| MORRISVIEW FROBISHER-ALIDA BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| NEILBURG MCLAREN SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| NEPTUNE RATCLIFFE BEDS | SOLUTION GAS DRIVE | NONE | 4 | CENTER OF 1/4 SECTION. |
| NORTH ANTLER MIDALE BEDS | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>ANTLER VOLUNTARY UNIT NO. 1 | 2 | ODD NUMBERED LSD. |
| NORTHGATE FROBISHER BEDS | PROBABLE WATER DRIVE | NONE | 4 | SE LSD OF 1/4 SECTION. |
| NORTHGATE MIDALE BEDS | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>NORTHGATE MIDALE VOLUNTARY UNIT | 2 | ODD NUMBERED LSD. |
| NORTH HANDSWORTH ALIDA BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |

# DEVELOPMENT DATA - OIL POOLS

| POOL NAME | NATURAL DEPLETION MECHANISM | ENHANCED RECOVERY PROJECTS | SPACING REGULATIONS * | |
|---|---|---|---|---|
| | | | DRAINAGE UNITS, LSDS | TARGET AREA |
| NORTH HOOSIER BAKKEN SAND | POSSIBLE WATER DRIVE | WATERFLOOD IN:<br>NORTH HOOSIER BAKKEN SAND VOLUNTARY UNIT | 1 | CENTER OF LSD. |
| NORTH HOOSIER BASAL BLAIRMORE | SOLUTION GAS DRIVE<br>PARTIAL WATER DRIVE | WATERFLOOD IN:<br>NORTH HOOSIER BASAL BLAIRMORE VOLUNTARY UNIT | 1/2 | SW & NE 1/4 OF LSD. |
| NORTHMINSTER SPARKY SAND | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>NORTHMINSTER SPARKY VOLUNTARY UNIT (SUSPENDED) | 1<br>1 | SW 1/4 OF LSD,<br>EXCEPT:<br>TWP 50, RGE 27, SEC: NW 1/4 OF 2, 11, LSDS 12,13,14,15 & 16 OF 12, S 1/2 & NW 1/4 OF 13, 14, N 1/2 OF 19, NW 1/4 OF 20, W 1/2 OF 29, 30, 31;<br>TWP 50, RGE 28, SEC: E 1/2 OF 36;<br>WHERE:<br>SE 1/4 OF LSD. |
| NORTHMINSTER NORTH G.P. SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| NORTHMINSTER NORTH SPARKY SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| NORTH PREMIER ROSERAY SAND | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>1: NORTH PREMIER UNIT NO. 1<br>2: NORTH PREMIER UNIT NO. 4 | 1 | SW 1/4 OF LSD. |
| NORTH PREMIER UPPER SHAUNAVON | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>1: NORTH PREMIER UPPER SHAUNAVON VOLUNTARY UNIT<br>2: NORTH PREMIER UNIT NO. 4 | 1<br>2 | SW 1/4 OF LSD,<br>EXCEPT:<br>TWP 14, RGE 19, SEC: 26, E 1/2 OF 27, 34, 35;<br>WHERE:<br>SW 1/4 OF ODD LSD. |
| NORTH SMILEY BAKKEN SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| NOTTINGHAM ALIDA BEDS | WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| OAKLEY FROBISHER BEDS | WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| OUNGRE RATCLIFFE BEDS | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>OUNGRE VOLUNTARY UNIT NO. 1 | 2 | ODD NUMBERED LSD. |
| PARKMAN SOURIS VALLEY BEDS | WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| PARKMAN TILSTON BEDS | WATER DRIVE | NONE | 1 | CENTER OF LSD. |
| PARKMAN TILSTON-SOURIS VALLEY | WATER DRIVE | NONE | 1 | CENTER OF LSD. |
| PARKMAN SOUTH TILSTON-SOURIS VALLEY | WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| PENNANT UPPER SHAUNAVON | SOLUTION GAS DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| PIKES PEAK G.P. SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| PIKES PEAK SPARKY SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| PIKES PEAK WASECA SAND | SOLUTION GAS DRIVE | CYCLIC STEAM STIMULATION | 1 | SE 1/4 OF LSD. |
| PINTO FROBISHER BEDS | WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| PINTO MIDALE BEDS | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>SOUTH PINTO UNIT | 2 | EVEN NUMBERED LSD. |
| PLATO NORTH VIKING | SOLUTION GAS DRIVE | NONE | 1 | CENTER OF LSD. |
| PLATO VIKING | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>PLATO VIKING VOLUNTARY UNIT NO. 1 | 1 | CENTER OF LSD. |

## DEVELOPMENT DATA - OIL POOLS

| POOL NAME | NATURAL DEPLETION MECHANISM | ENHANCED RECOVERY PROJECTS | SPACING REGULATIONS * DRAINAGE UNITS, LSDS | SPACING REGULATIONS * TARGET AREA |
|---|---|---|---|---|
| PLOVER LAKE BAKKEN SAND | SOLUTION GAS DRIVE | NONE | 1 | CENTER OF LSD. |
| QUEENSDALE EAST FROBISHER-ALIDA BEDS | WATER DRIVE | NONE | 1 | CENTER OF LSD. |
| QUEENSDALE NORTH ALIDA BEDS | WATER DRIVE | NONE | 1 | CENTER OF LSD. |
| QUEENSDALE WEST ALIDA BEDS | WATER DRIVE | NONE | 1 | CENTER OF LSD. |
| RALPH MIDALE BEDS | SOLUTION GAS DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| RAPDAN UPPER SHAUNAVON | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>1: RAPDAN UNIT<br>2: NORTH RAPDAN UPPER SHAUNAVON VOLUNTARY UNIT<br>3: RAPDAN UPPER SHAUNAVON VOLUNTARY UNIT NO. 2<br>PILOT POLYMER FLOOD IN:<br>RAPDAN UNIT | 2 | EVEN NUMBERED LSD,<br>EXCEPT:<br>A: TWP 3, RGE 20, SEC: NE 1/4 OF 32, NW 1/4 OF 33;<br>TWP 4, RGE 20, SEC: W 1/2 OF 4, E 1/2 OF 5, E 1/2 OF 8, W 1/2 OF 9, SW 1/4 OF 16, SE 1/4 OF 17;<br>WHERE: |
| | | | 4 | NE LSD IN 1/4 SECTION.<br>B: TWP 4, RGE 19, SEC: E 1/2 & NW 1/4 OF 30, 31, 32;<br>TWP 4, RGE 20, SEC: 26, 35, S 1/2 & NE 1/4 OF 36;<br>TWP 5, RGE 19, SEC: 5, W 1/2 & NE 1/4 OF 7, 8;<br>TWP 5, RGE 20, SEC: W 1/2 OF 1, 2, 12;<br>WHERE: |
| | | | 4 | SW LSD IN 1/4 SECTION. |
| RAPDAN WEST SHAUNAVON | SOLUTION GAS DRIVE | NONE | 4 | NE LSD OF 1/4 SECTION. |
| RED JACKET GRAVELBOURG | PROBABLE WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| RED JACKET SHAUNAVON-GRAVELBOURG | PROBABLE WATER DRIVE | NONE | 1 | CENTER OF LSD. |
| ROCANVILLE BAKKEN SAND | PARTIAL WATER DRIVE | NONE | 1 | CENTER OF LSD. |
| RONCOTT BAKKEN SAND | POSSIBLE WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| ROSEBANK ALIDA BEDS | WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| ROSEBANK SOUTH ALIDA BEDS | WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| RUSH LAKE MANNVILLE SANDS | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| RUSH LAKE SPARKY SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| RUSH LAKE WASECA SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| SALT LAKE LLOYDMINSTER SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| SENLAC LLOYDMINSTER SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| SHERWOOD FROBISHER BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD,<br>EXCEPT:<br>TWP 1, RGE 31, SEC: LSDS 1,2,3 & 4 OF 6,<br>TWP 1, RGE 32, SEC: LSDS 1,2,3 & 4 OF 1, LSDS 1,2,3 & 4 OF 2;<br>WHERE: |
| | | | 1 | CENTRE OF LSD. |

# DEVELOPMENT DATA - OIL POOLS

| POOL NAME | NATURAL DEPLETION MECHANISM | ENHANCED RECOVERY PROJECTS | SPACING REGULATIONS * | |
|---|---|---|---|---|
| | | | DRAINAGE UNITS, LSDS | TARGET AREA |
| SILVERDALE SPARKY SAND | SOLUTION GAS DRIVE | PILOT WATER ALTERNATING GAS INJECTION | 1/4<br>1 | CENTER OF EACH 1/4 LSD,<br>EXCEPT:<br>A: TWP 49, RGE 28, SEC: LSDS 3,6,11,14 & E 1/2 OF 14, LSDS 3,6,11,14 & SE 1/4 OF 23;<br>WHERE:<br>CENTRE OF LSD.<br>B: TWP 49, RGE 27, SEC: N 1/2 OF 6;<br>TWP 48, RGE 28, SEC: LSDS 4,5,12 & 13 OF 14, LSDS 1,8,9 & 16 OF 15, LSDS 1,8,9 & 16 OF 22, LSDS 4,5,12 & 13 OF 23, LSDS 1,8,9 & 16 OF 27, LSDS 1,8, 9 & 16 OF 34;<br>TWP 49, RGE 28, SEC: LSDS 1,8,9, & 16 OF 3, LSDS 1,8,9 & 16 OF 10, LSDS 1,8,9 & 16 OF 15;<br>WHERE:<br>SPECIAL PROVISIONS FOR PARTIAL SECTIONS. |
| SILVERTON FROBISHER BEDS | WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| SKINNER LAKE RATCLIFFE BEDS | SOLUTION GAS DRIVE | NONE | 4 | NW LSD OF 1/4 SECTION. |
| SMILEY-DEWAR VIKING | SOLUTION GAS DRIVE | WATERFLOOD | 1 | CENTER OF LSD. |
| SOURIS FLAT FROBISHER BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| SOUTH FLETWODE TILSTON BEDS | WATER DRIVE | NONE | 1 | CENTER OF LSD. |
| SOUTH SUCCESS ROSERAY SAND | SOLUTION GAS DRIVE<br>PARTIAL WATER DRIVE | WATERFLOOD IN:<br>SUCCESS UNIT | 1 | SW 1/4 OF LSD. |
| STANDARD HILL WASECA SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| STAR VALLEY FROBISHER-ALIDA BEDS | WATER DRIVE | NONE | 1 | CENTER OF LSD. |
| STEELMAN FROBISHER BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| STEELMAN MIDALE BEDS | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>1: STEELMAN UNIT NO. 1A<br>2: STEELMAN UNIT NO. 2<br>3: STEELMAN UNIT NO. 3<br>4: STEELMAN UNIT NO. 4<br>5: STEELMAN UNIT NO. 5<br>6: STEELMAN UNIT NO. 6<br>7: STEELMAN UNIT NO. 7<br>8: LAMPMAN UNIT<br>9: DOUGLASTON MIDALE BEDS UNIT<br>10: STEELMAN NORTH MIDALE VOLUNTARY UNIT NO. 1<br>11: STEELMAN NORTH MIDALE VOLUNTARY UNIT NO. 2 | 2 | ODD NUMBERED LSD. |
| STORTHOAKS ALIDA-TILSTON BEDS | WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| STOUGHTON FROBISHER-ALIDA BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| STOUGHTON SOUTH FROBISHER BEDS | PROBABLE WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| SUCCESS NORTH ROSERAY SAND | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>SUCCESS NORTH ROSERAY VOLUNTARY UNIT | 1 | CENTER OF LSD. |
| SUCCESS ROSERAY SAND ALPHA | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>SUCCESS ALPHA UNIT | 1 | SW 1/4 OF LSD. |

## DEVELOPMENT DATA - OIL POOLS

| POOL NAME | NATURAL DEPLETION MECHANISM | ENHANCED RECOVERY PROJECTS | SPACING REGULATIONS * | |
|---|---|---|---|---|
| | | | DRAINAGE UNITS, LSDS | TARGET AREA |
| SUFFIELD ROSERAY SAND | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>1: SUFFIELD UNIT NO. 1<br>2: SUFFIELD UNIT NO. 3 | 2<br><br><br><br><br>1 | ODD NUMBERED LSD,<br>EXCEPT:<br>TWP 14, RGE 19, SEC: 17, E 1/2 &<br>NW 1/4 OF 18, S 1/2 OF 19, S 1/2 OF 20;<br>WHERE:<br>CENTER OF LSD. |
| SUFFIELD UPPER SHAUNAVON | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>1: SUFFIELD UNIT NO. 2<br>2: SUFFIELD UNIT NO. 3 | 2 | ODD NUMBERED LSD. |
| TANGLEFLAGS EAST MCLAREN SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| TANGLEFLAGS G.P. SAND | SOLUTION GAS DRIVE | PILOT IN-SITU WET COMBUSTION | 1 | SE 1/4 OF LSD. |
| TANGLEFLAGS LLOYDMINSTER SAND | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>TANGLEFLAGS VOLUNTARY UNIT NO. 2 | 1 | SE 1/4 OF LSD. |
| TANGLEFLAGS MANNVILLE SANDS | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| TANGLEFLAGS MCLAREN SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| TANGLEFLAGS NORTH CUMMINGS | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| TANGLEFLAGS NORTH G.P. SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| TANGLEFLAGS NORTH LLOYD. SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| TANGLEFLAGS SPARKY SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| TANGLEFLAGS WEST G.P. SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| TANGLEFLAGS WEST LLOYD. SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| TANGLEFLAGS WEST SPARKY SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| TATAGWA MIDALE BEDS | PROBABLE WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| VERLO ROSERAY SAND | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>VERLO ROSERAY SAND UNIT | 2 | EVEN NUMBERED LSD. |
| VIEWFIELD FROBISHER BEDS | SOLUTION GAS DRIVE<br>PARTIAL WATER DRIVE | WATERFLOOD IN:<br>VIEWFIELD VOL. UNIT NO. 1 | 1 | CENTER OF LSD. |
| VIEW HILL MIDALE BEDS | WATER DRIVE | NONE | 4 | NW LSD OF 1/4 SECTION. |
| WAPELLA SAND | WATER DRIVE | NONE | 1 | CENTER OF LSD. |
| WARMLEY ALIDA BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| WAUCHOPE ALIDA-TILSTON BEDS | WATER DRIVE | NONE | 1 | CENTER OF LSD. |
| WEIR HILL FROBISHER BEDS | PROBABLE WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| WEST INNES FROBISHER BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| WEST KINGSFORD MIDALE BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| WESTHAZEL G.P. SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |
| WESTHAZEL SPARKY SAND | SOLUTION GAS DRIVE | NONE | 1 | SE 1/4 OF LSD. |

# DEVELOPMENT DATA - OIL POOLS

| POOL NAME | NATURAL DEPLETION MECHANISM | ENHANCED RECOVERY PROJECTS | SPACING REGULATIONS * DRAINAGE UNITS, LSDS | TARGET AREA |
|---|---|---|---|---|
| WEYBURN FROBISHER BEDS | WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD,<br>EXCEPT:<br>TWP 6, RGE 11, SEC: W 1/2 OF 31;<br>TWP 7, RGE 11, SEC: 6, 7;<br>TWP 5, RGE 12, SEC: NW 1/4 OF 35;<br>TWP 6, RGE 12, SEC: LSDS 13 & 14 OF 1, NE 1/4 & W 1/2 & LSDS 7 & 8 OF 2, 11, W 1/2 OF 12, 13, 14, NE 1/4 OF 22, 23, 24, 25, 26, 27, 33, 34, 35, 36;<br>TWP 7, RGE 12, SEC: 1, S 1/2 & NE 1/4 OF 2, S 1/2 OF 3, SE 1/4 OF 4, E 1/2 OF 11, 12;<br>WHERE: |
| | | | 2 | ODD NUMBERED LSD. |
| WEYBURN MIDALE BEDS | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>WEYBURN UNIT | 2 | EVEN NUMBERED LSD,<br>EXCEPT:<br>TWP 6, RGE 11, SEC: W 1/2 OF 31;<br>TWP 7, RGE 11, SEC: 6, 7;<br>TWP 5, RGE 12, SEC: LSDS 11 & 12 OF 35<br>TWP 6, RGE 12, SEC: LSDS 13 & 14 OF 12, 13, LSDS 9,10,13 & 14 OF 14, NE 1/4 OF 22, 23, 24, 25, LSDS 3 & 4 & E 1/2 OF 26, LSDS 5,6,7 & 8 & N 1/2 OF 33, NE 1/4 OF 34, E 1/2 & NW 1/4 OF 35, 36;<br>TWP 7, RGE 12, SEC: 1, S 1/2 & NE 1/4 OF 2, S 1/2 OF 3, SE 1/4 OF 4, E 1/2 OF 11, 12;<br>WHERE: |
| | | | 2 | ODD NUMBERED LSD. |
| WEYBURN NORTH FROBISHER BEDS | WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| WEYBURN NORTH MIDALE BEDS | SOLUTION GAS DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| WHITE BEAR TILSTON BEDS | WATER DRIVE | NONE | 1 | CENTER OF LSD. |
| WHITE BEAR TILSTON-SOURIS VALLEY BEDS | WATER DRIVE | NONE | 1 | CENTER OF LSD. |
| WHITEMUD UPPER SHAUNAVON | SOLUTION GAS DRIVE | NONE | 4 | NE LSD OF 1/4 SECTION. |
| WHITESIDE VIKING SAND | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>WHITESIDE VIKING VOLUNTARY UNIT | 1 | CENTER OF LSD. |
| WILDWOOD ALIDA BEDS | WATER DRIVE | NONE | 2 | EVEN NUMBERED LSD. |
| WILLMAR FROBISHER-ALIDA BEDS | WATER DRIVE<br>SOLUTION GAS DRIVE<br>PARTIAL WATER DRIVE | WATERFLOOD IN:<br>1: WILLMAR FROBISHER-ALIDA VOLUNTARY UNIT NO. 1<br>2: NORTH DALESBORO UNIT NO. 1<br>3: NORTH CENTRAL WILLMAR VOLUNTARY UNIT | 2 | EVEN NUMBERED LSD,<br>EXCEPT:<br>TWP 5, RGE 2, SEC: W 1/2 & NE 1/4 OF 31;<br>TWP 6, RGE 2, SEC: 6, S 1/2 & NE 1/4 OF 7, SW 1/4 OF 8;<br>TWP 5, RGE 3, SEC: NE 1/4 OF 25, 35, 36;<br>TWP 6, RGE 3, SEC: 1, S 1/2 & NE 1/4 OF 2, SE 1/4 OF 12;<br>WHERE: |
| | | | 1 | CENTER OF LSD. |
| WINMORE FROBISHER BEDS | SOLUTION GAS DRIVE<br>PARTIAL WATER DRIVE | NONE | 2 | ODD NUMBERED LSD. |
| WINTER CUMMINGS SAND | SOLUTION GAS DRIVE | NONE | 1 | CENTER OF LSD. |
| WORKMAN FROBISHER BEDS | SOLUTION GAS DRIVE<br>WATER DRIVE | WATERFLOOD IN:<br>WORKMAN FROBISHER VOLUNTARY UNIT NO. 1 | 2 | ODD NUMBERED LSD. |

## DEVELOPMENT DATA - OIL POOLS

| POOL NAME | NATURAL DEPLETION MECHANISM | ENHANCED RECOVERY PROJECTS | SPACING REGULATIONS * | |
|---|---|---|---|---|
| | | | DRAINAGE UNITS, LSDS | TARGET AREA |
| WORKMAN MIDALE BEDS | SOLUTION GAS DRIVE | WATERFLOOD IN:<br>1: WORKMAN MIDALE VOLUNTARY UNIT NO. 1<br>2: WORKMAN MIDALE VOLUNTARY UNIT NO. 2 | 2 | ODD NUMBERED LSD. |

* SPACING REGULATIONS IN EFFECT ON JANUARY 1,1987.

# DEVELOPMENT DATA - GAS POOLS

| | SPACING REGULATIONS * | |
|---|---|---|
| POOL NAME | DRAINAGE UNIT SECTIONS | TARGET AREA |
| BAYHURST VIKING GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| BAYHURST WEST VIKING GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| BEACON HILL MANNVILLE SAND GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| BEACON HILL WEST MANNVILLE SAND GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| BEVERLEY EAST CANTUAR GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| BIGSTICK SECOND WHITE SPECKS GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| BROCK VIKING SAND GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| BROCK EAST VIKING GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| BURSTALL MEDICINE HAT SAND GAS POOL | 1/4 | NORTHEAST CORNER OF DRAINAGE UNIT. |
| BURSTALL MILK RIVER GAS POOL | 1/4 | NORTHEAST CORNER OF DRAINAGE UNIT. |
| BURSTALL MILK RIVER-MEDICINE HAT GAS POOL | 1/4 | NORTHEAST CORNER OF DRAINAGE UNIT. |
| BURSTALL NORTH VIKING SAND GAS | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| CAVALIER SPINNEY HILL SAND GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| COLEVILLE-SMILEY VIKING SAND GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| DODSLAND NORTH VIKING GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| FORT PITT MANNVILLE SAND GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| FORT PITT NORTH MANNVILLE SAND GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| GLIDDEN VIKING GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| GREENAN VIKING GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| GULL LAKE CANTUAR GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| HATTON MEDICINE HAT SAND GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| | 1/2 | SEE POOL REGULATIONS FOR DETAILS. |
| | 1/4 | SEE POOL REGULATIONS FOR DETAILS. |
| | < 1/4 | SEE POOL REGULATIONS FOR DETAILS. |
| HATTON MILK RIVER GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| | 1/2 | SEE POOL REGULATIONS FOR DETAILS. |
| | 1/4 | SEE POOL REGULATIONS FOR DETAILS. |
| | < 1/4 | SEE POOL REGULATIONS FOR DETAILS. |
| HATTON MILK RIVER-MEDICINE HAT GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| | 1/2 | SEE POOL REGULATIONS FOR DETAILS. |
| | 1/4 | SEE POOL REGULATIONS FOR DETAILS. |
| | < 1/4 | SEE POOL REGULATIONS FOR DETAILS. |
| HOOSIER VIKING SAND GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| LIEBENTHAL MILK RIVER GAS POOL | 1/4 | NORTHEAST CORNER OF DRAINAGE UNIT,<br>EXCEPT: TWP 19, RGE 25, SEC: 1 TO 4, 9 TO 16, 21 TO 28, & 33 TO 36;<br>TWP 20, RGE 25, SEC: 1 TO 4;<br>WHERE: CENTRE OF DRAINAGE UNIT. |
| LLOYDMINSTER COLONY SAND GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| MARENGO VIKING GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| MILTON VIKING SAND GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| PIERCELAND MANNVILLE SAND GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| SENATE SECOND WHITE SPECKS GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| TANGLEFLAGS COLONY SAND GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| TANGLEFLAGS MCLAREN SAND GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| TANGLEFLAGS SECOND WHITE SPECKS GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| TANGLEFLAGS ST. WALBURG SAND GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| TOTNES VIKING GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| WHITESIDE RIBSTONE CREEK SAND GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| WHITESIDE WEST RIBSTONE CREEK SAND GAS POOL | 1 | CENTRE OF DRAINAGE UNIT (500 METRES FROM D.U. EDGE). |
| WHITESIDE WEST VIKING SAND GAS POOL | 1/2 | CENTRE OF NORTHWEST & SOUTHEAST 1/4 OF SECTION,<br>EXCEPT: TWP 30, RGE 26, SEC: 18 & 19;<br>TWP 30, RGE 27, SEC: 13;<br>WHERE : CENTRE OF NORTHEAST & SOUTHWEST 1/4 OF SECTION. |

* SPACING REGULATIONS IN EFFECT ON JANUARY 1, 1987.

## AREA SPACING DESCRIPTION*

| SPACING AREA | DRAINAGE UNIT SIZE (No. of Lsds) | TARGET AREA | EXCEPTIONS |
|---|---|---|---|
| | | - OIL AREAS - | |
| A | 2 | Odd numbered Lsds. | A well greater than 1 1/2 miles from a producer in the same zone may be drilled on the even or odd Lsd. |
| B | 2 | Even numbered Lsds. | A well greater than 1 1/2 miles from a producer in the same zone may be drilled on the even or odd Lsd. |
| C | 4 | Any quadrant of a quarter section. | Wells drilled within a 9 section square area centred on the section of an existing oil well shall take on the spacing of this existing well.<br>Wells drilled within a 9 section square area centred on the section of an existing well in an established oil pool shall take on the spacing of this pool. |
| D | 2 | Odd or even Lsds. | Wells drilled within a 9 section square area centred on the section of an existing oil well shall take on the spacing of this existing well.<br>Wells drilled within a 9 section square area centred on the section of an existing well in an established oil pool shall take on the spacing of this pool. |
| E | 1 | Southeast quadrant of the Lsd. | Wells drilled within a corridor of 1609 metres around an established oil pool shall take on the spacing of this pool.<br>Applies only to wells drilled within the Mannville Group, Detrital, Bakken or Birdbear Formations. |
| | | - GAS AREAS - | |
| G | 16 | Odd or even Lsds. | Wells drilled within a 9 section square area centred on a section that contains a gas well shall be drilled at least 500 metres from the sides of the drainage unit.<br>Applies only to Mannville Formation. |

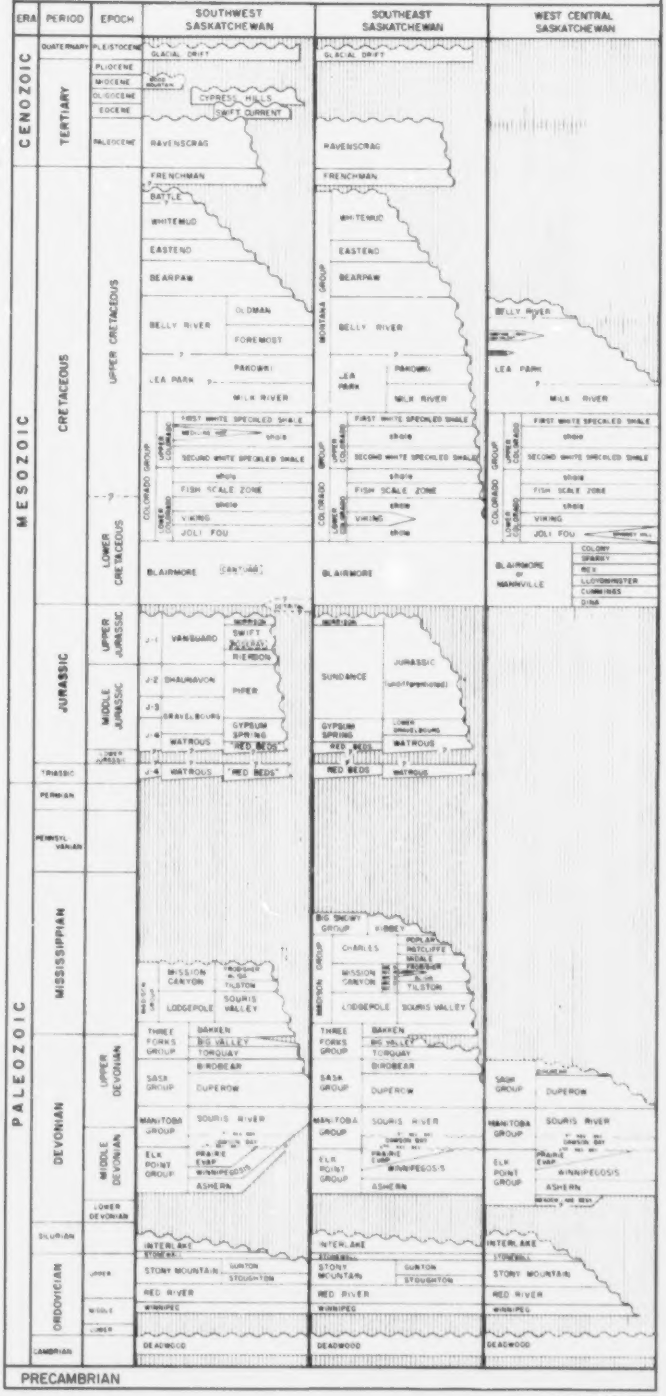
* See the Oil and Gas Conservation Act & Regulations Thereunder for complete area spacing regulations.

# TYPICAL WELL LOGS
# OF PRODUCING ZONES

# LITHOLOGY LEGEND

| | |
|---|---|
| Silt | ∙ ∙ ∙ |
| Shale | – – – |
| Sandstone | ⋯ |
| Limestone | ▦ |
| Calcareous shale | I – I – I |
| Argillaceous sandstone | ⋯ – ⋯ |
| Coal | ▨ |
| Chert pebbles | ▵ ▵ ▵ |
| Interbedded shale and sandstone | – – – ⋯ – – – |
| Dolomite or dolomitic limestone | ⧄ |
| Argillaceous and anhydritic dolomite | –/–/ ∧/∧/ |
| Oolitic | ○ ○ ○ |
| Anhydrite | ∧ ∧ ∧ |

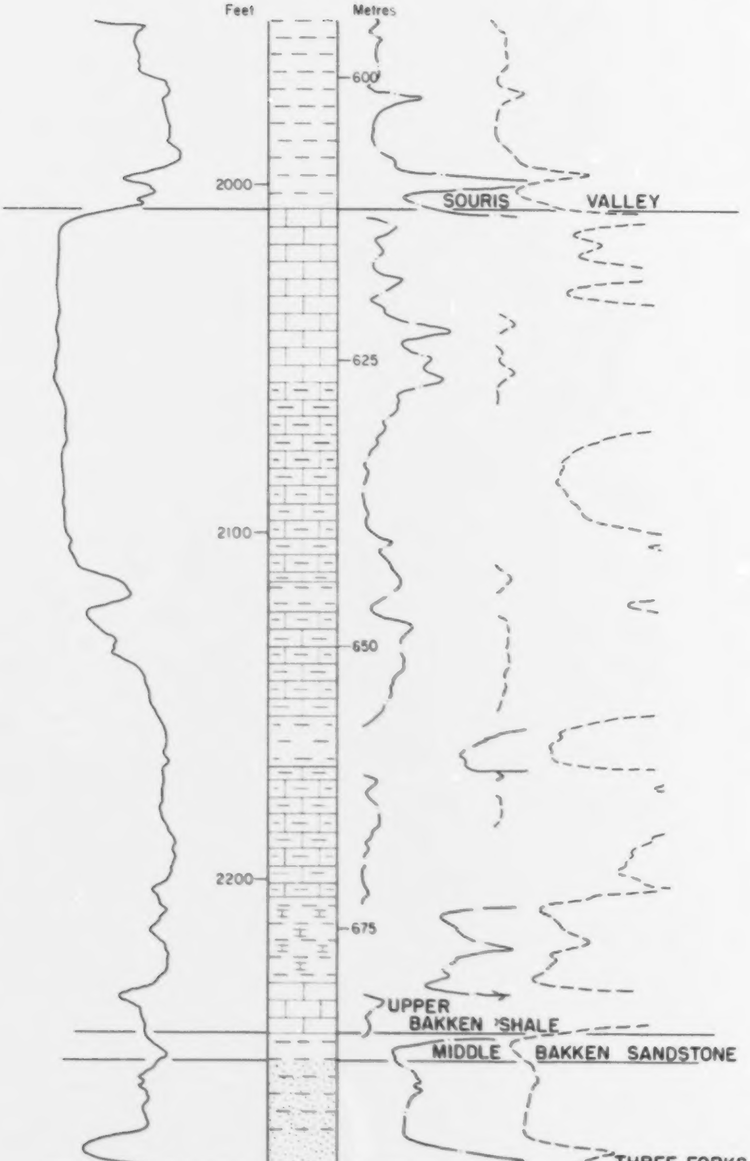
## STRATIGRAPHIC CORRELATION CHART
### OF SASKATCHEWAN


ERA
PERIOD
EPOCH
SOUTHWEST SASKATCHEWAN
SOUTHEAST SASKATCHEWAN
WEST CENTRAL SASKATCHEWAN
CENOZOIC
MESOZOIC
PALEOZOIC
QUATERNARY
TERTIARY
CRETACEOUS
JURASSIC
TRIASSIC
PERMIAN
PENNSYLVANIAN
MISSISSIPPIAN
DEVONIAN
SILURIAN
ORDOVICIAN
CAMBRIAN
PLEISTOCENE
PLIOCENE
MIOCENE
OLIGOCENE
EOCENE
PALEOCENE
UPPER CRETACEOUS
LOWER CRETACEOUS
UPPER JURASSIC
MIDDLE JURASSIC
LOWER JURASSIC
UPPER DEVONIAN
MIDDLE DEVONIAN
LOWER DEVONIAN
UPPER
MIDDLE
LOWER
GLACIAL DRIFT
CYPRESS HILLS
SWIFT CURRENT
RAVENSCRAG
FRENCHMAN
BATTLE
WHITEMUD
EASTEND
BEARPAW
MONTANA GROUP
BELLY RIVER
OLDMAN
FOREMOST
LEA PARK
PAKOWKI
MILK RIVER
COLORADO GROUP
UPPER COLORADO
LOWER COLORADO
FIRST WHITE SPECKLED SHALE
shale
SECOND WHITE SPECKLED SHALE
FISH SCALE ZONE
VIKING
JOLI FOU
BLAIRMORE
CANTUAR
BLAIRMORE or MANNVILLE
COLONY
SPARKY
REX
LLOYDMINSTER
CUMMINGS
DINA
J-1
VANGUARD
SWIFT
RIERDON
J-2
SHAUNAVON
PIPER
J-3
GRAVELBOURG
GYPSUM SPRING
J-4
WATROUS
"RED BEDS"
SUNDANCE
JURASSIC (undifferentiated)
LOWER GRAVELBOURG
RED BEDS
BIG SNOWY GROUP
KIBBEY
MADISON GROUP
CHARLES
POPLAR
RATCLIFFE
MIDALE
FROBISHER
ALIDA
TILSTON
MISSION CANYON
LODGEPOLE
SOURIS VALLEY
THREE FORKS GROUP
BAKKEN
BIG VALLEY
TORQUAY
BIRDBEAR
SASK GROUP
DUPEROW
MANITOBA GROUP
SOURIS RIVER
DAWSON BAY
ELK POINT GROUP
PRAIRIE EVAP
WINNIPEGOSIS
ASHERN
INTERLAKE
STONEWALL
STONY MOUNTAIN
GUNTON
STOUGHTON
RED RIVER
WINNIPEG
DEADWOOD
PRECAMBRIAN

# HUDSON ROCANVILLE 4-4

4-4-16-31-W1

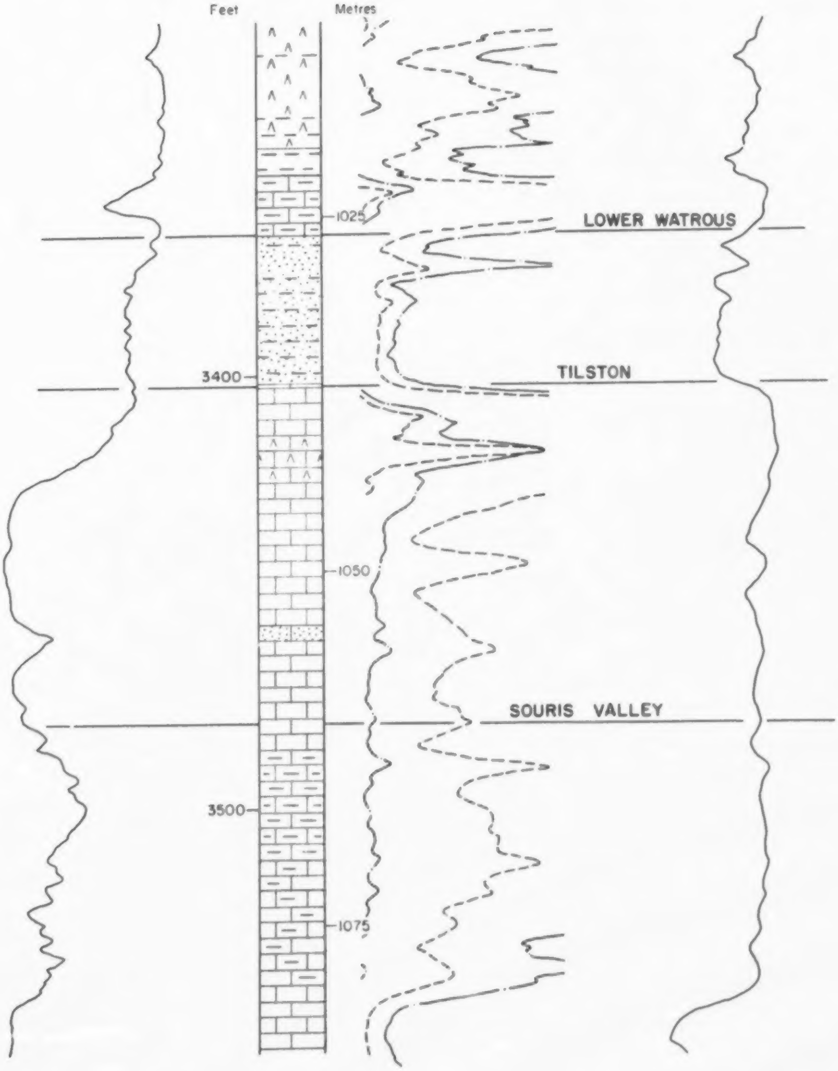
PRODUCING HORIZON : BAKKEN SAND



## ROYALITE PARKMAN 2-3

2-3-9-33-W1

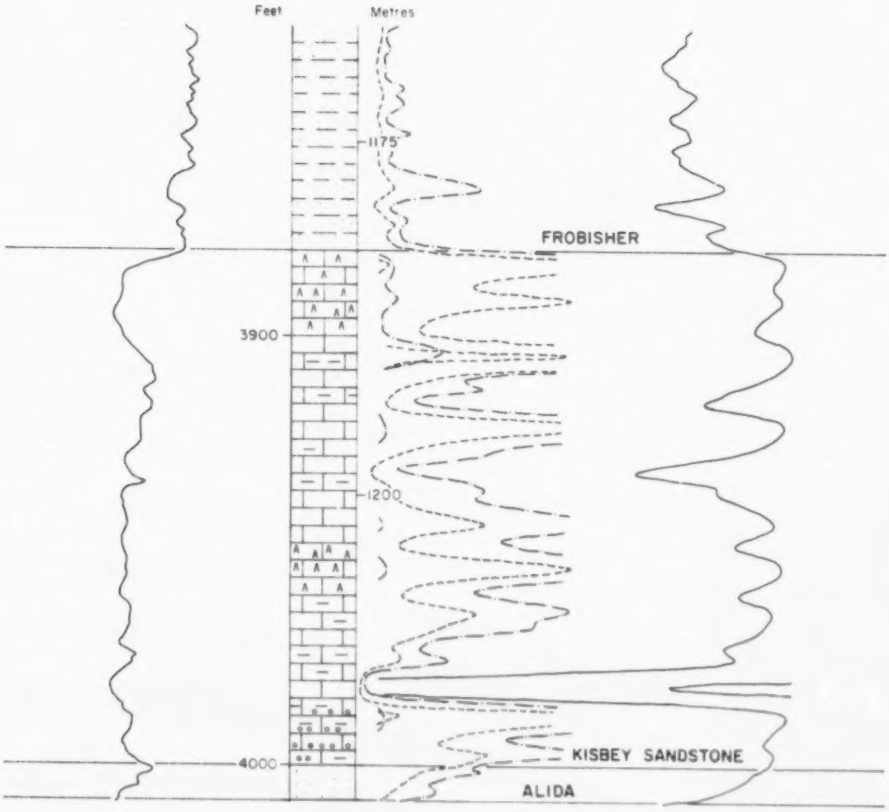
PRODUCING HORIZONS : TILSTON AND SOURIS VALLEY BEDS


Feet
Metres
1025
LOWER WATROUS
3400
TILSTON
1050
SOURIS VALLEY
3500
1075

# MURPHY HASTINGS 7-24-4-34

7-24-4-34-W1

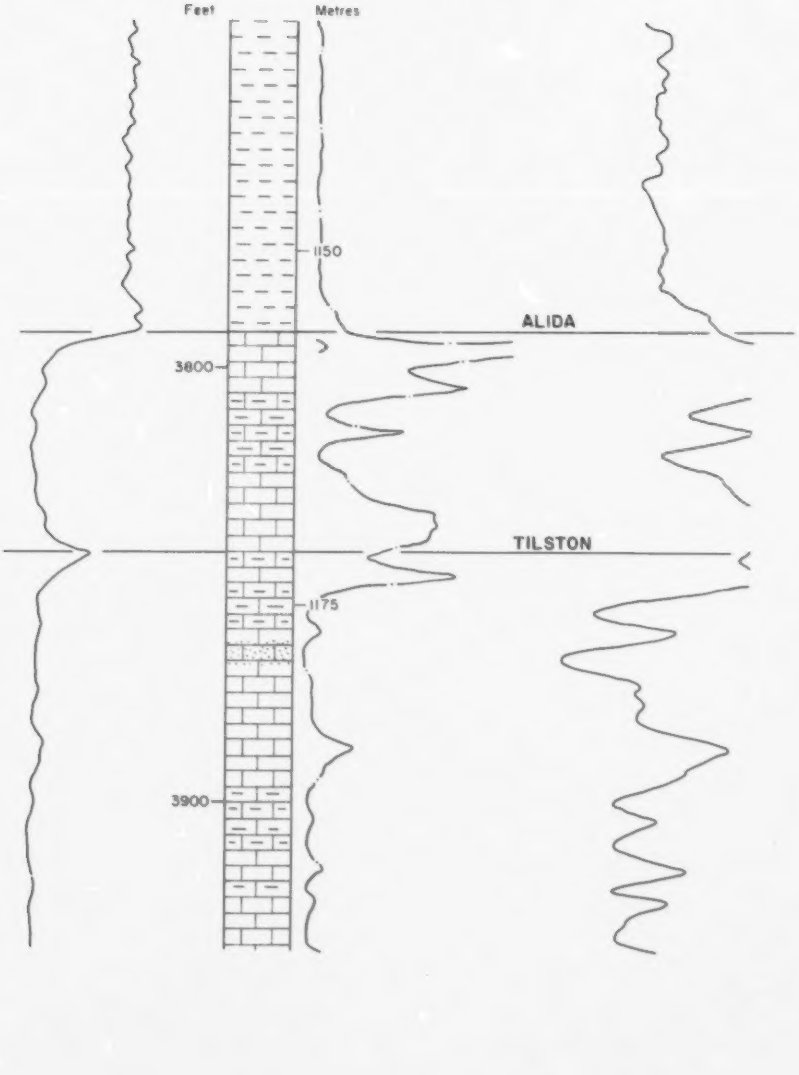
PRODUCING HORIZON : FROBISHER BEDS



## SUN QUEENSDALE 2-13-6-1

2-13-6-1-W2

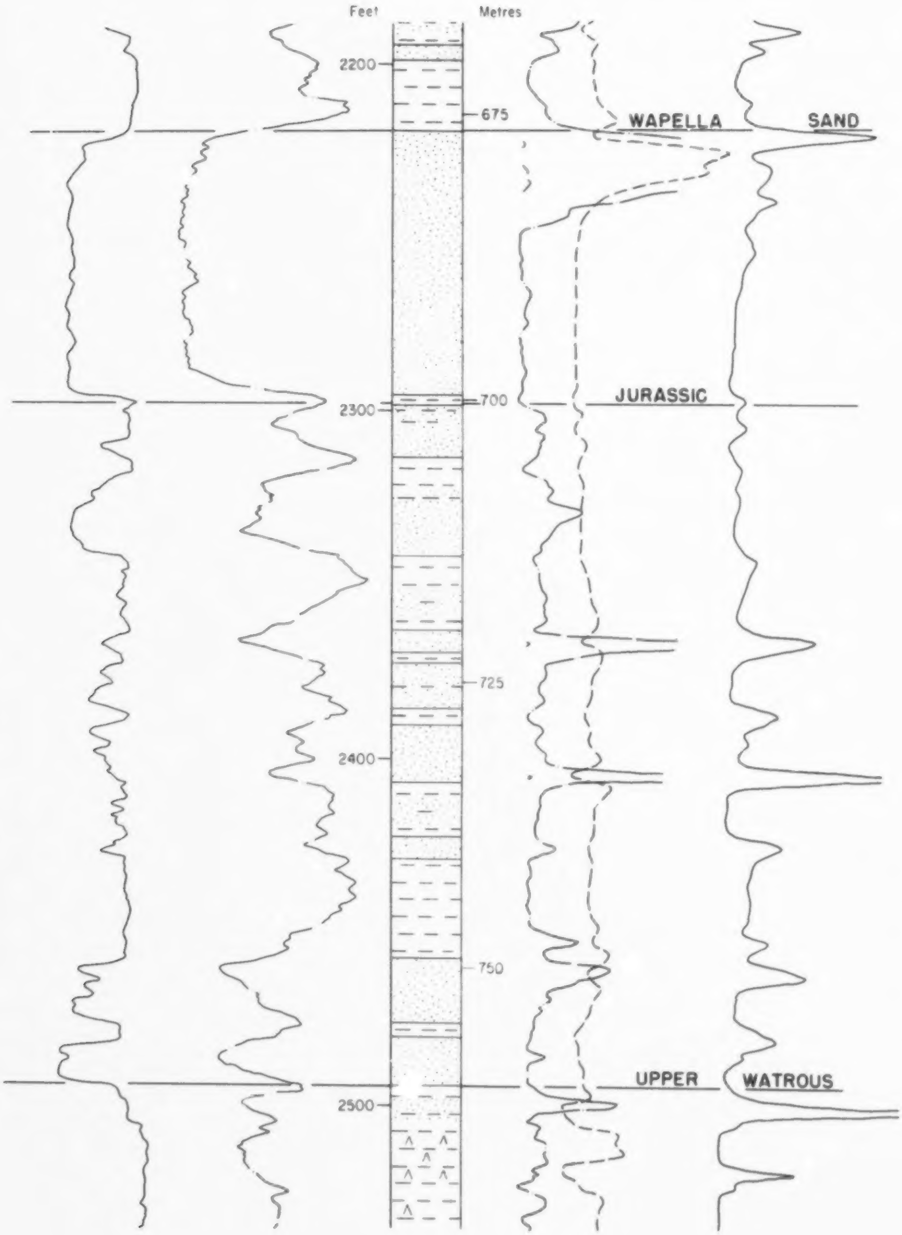
PRODUCING HORIZON : ALIDA BEDS



# TIDEWATER WAPELLA 6-33

6-33-14-1-W2

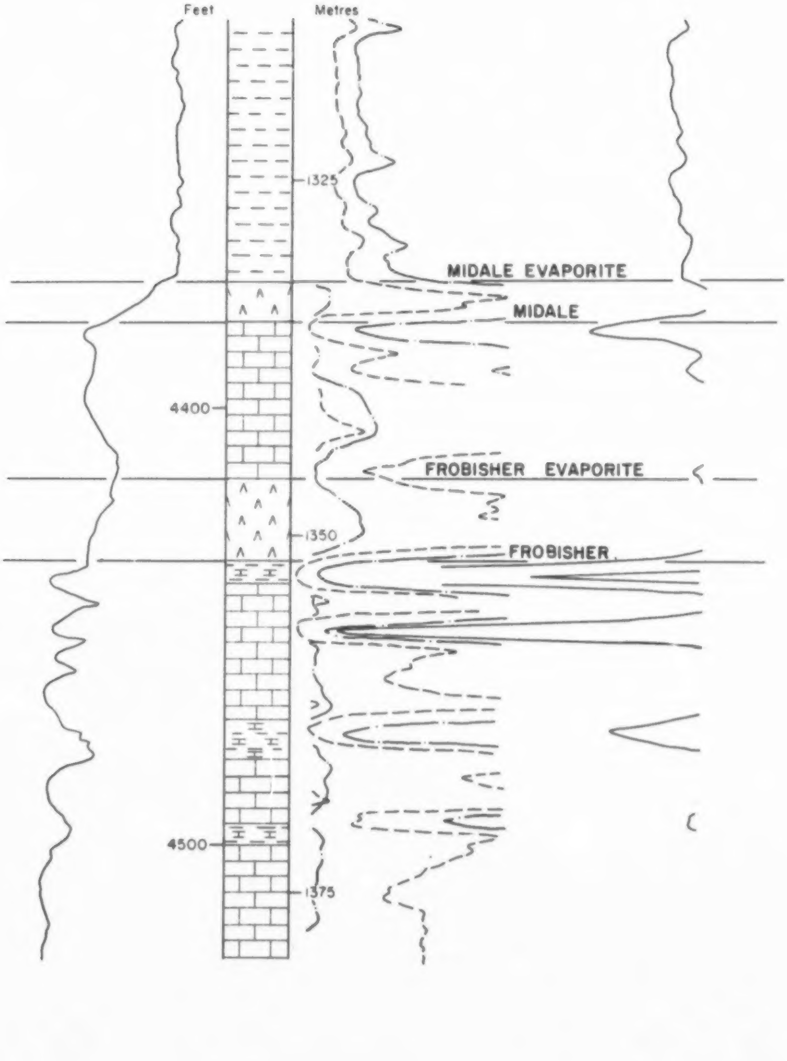
PRODUCING HORIZONS : WAPELLA AND JURASSIC SANDS



# PHOENIX et al STEELMAN 5-24-5-6

5-24-5-6-W2

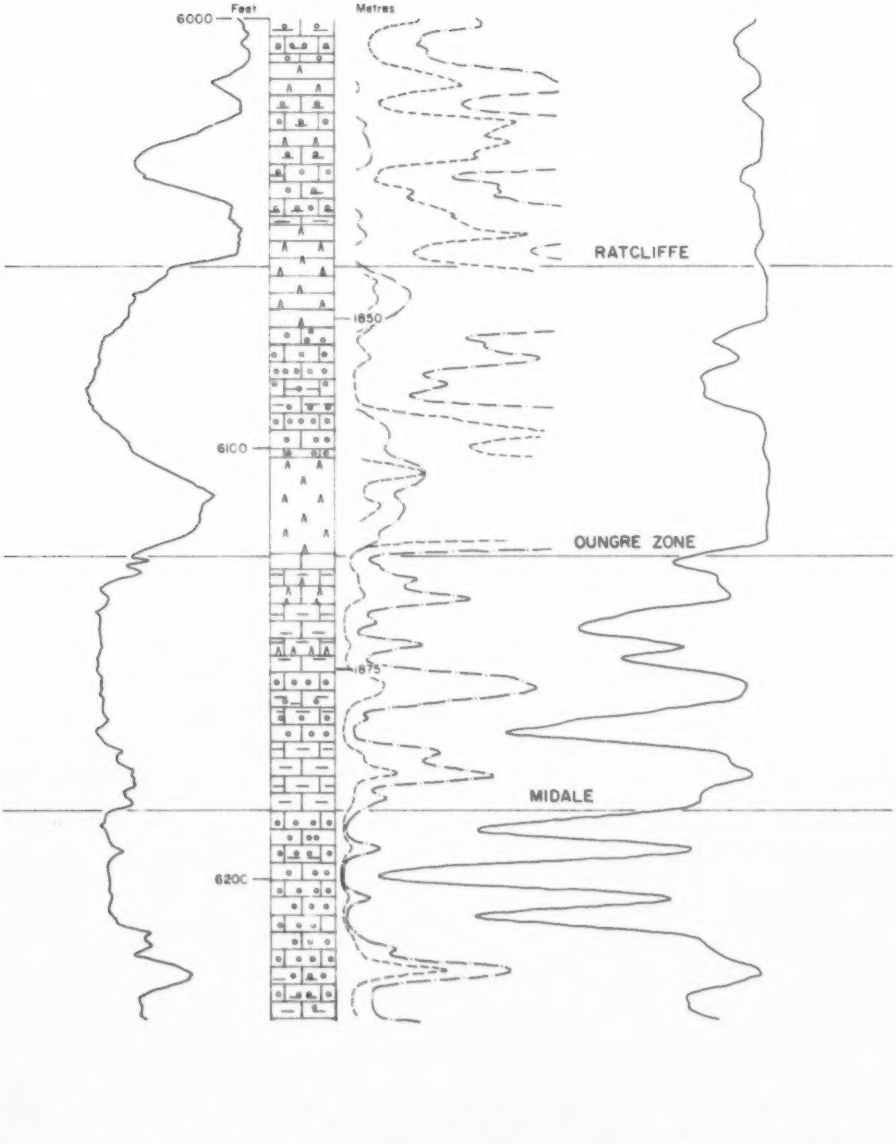
PRODUCING HORIZONS : MIDALE AND FROBISHER BEDS


Feet
Metres
1325
MIDALE EVAPORITE
MIDALE
4400
FROBISHER EVAPORITE
1350
FROBISHER
4500
1375

## CNEL CDR OUNGRE 9-24-2-15

9-24-2-15-W2

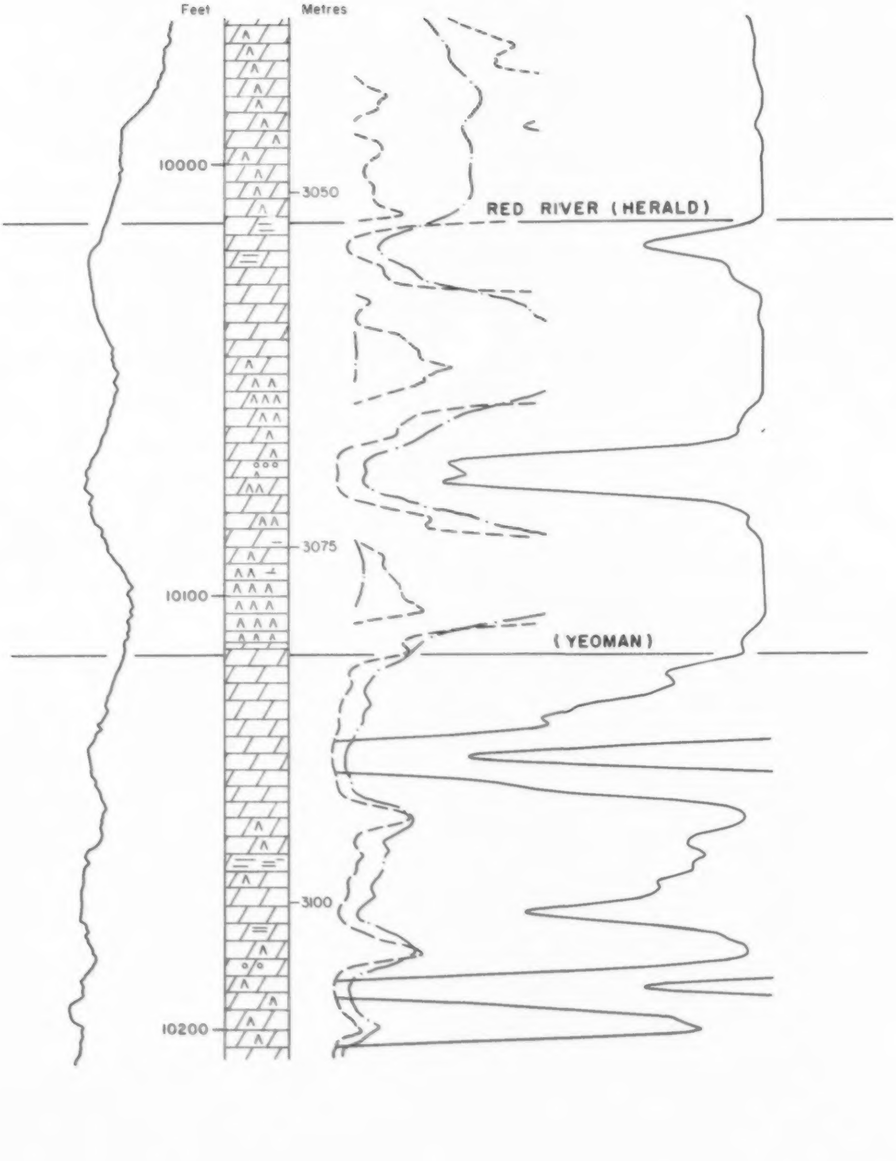
PRODUCING HORIZON : RATCLIFFE BEDS



# C.D.R. S LAKE ALMA 1-14-1-17

1-14-1-17-W2

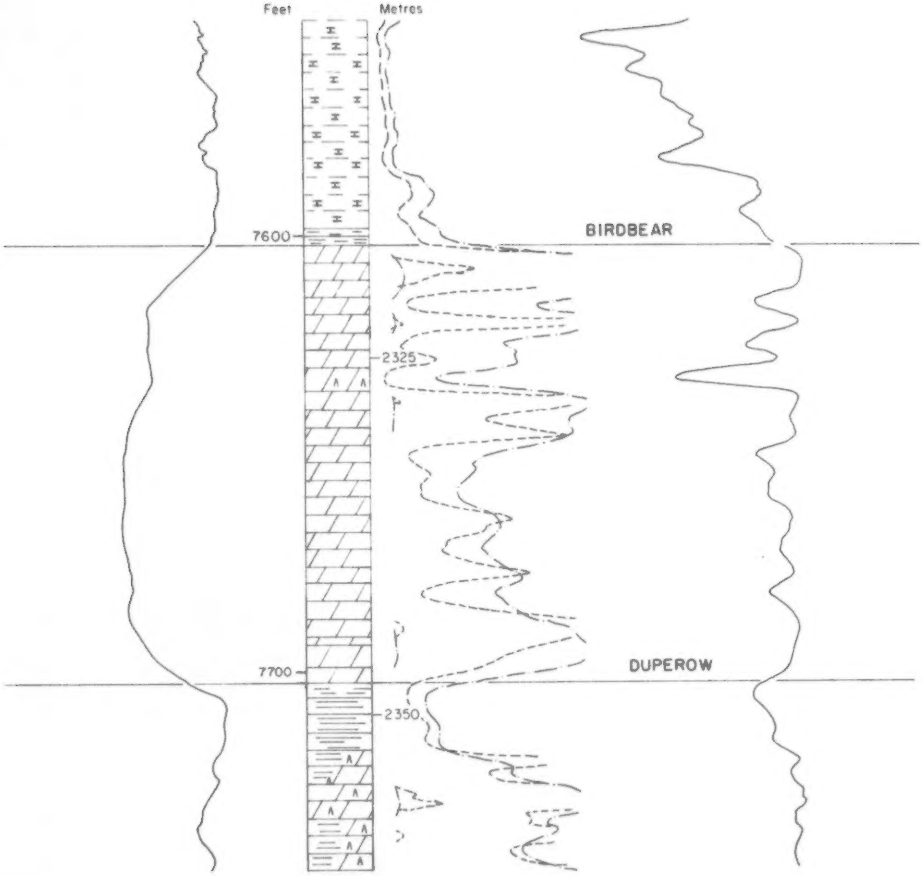
PRODUCING HORIZON : RED RIVER FORMATION



## HB MIAMI HUMMINGBIRD 11-26-2-19

11-26-2-19-W2

PRODUCING HORIZON : BIRDBEAR FORMATION

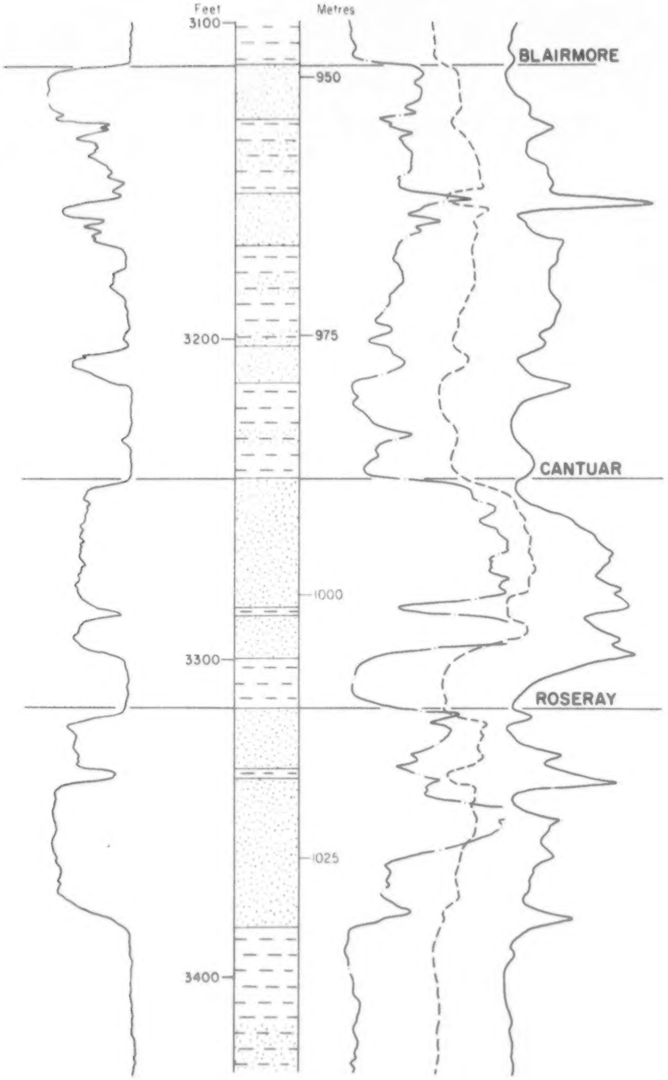


Feet
Metres
7600
BIRDBEAR
2325
7700
DUPEROW
2350

# M.U.S. CANTUAR 5-2-16-17

5-2-16-17-W3

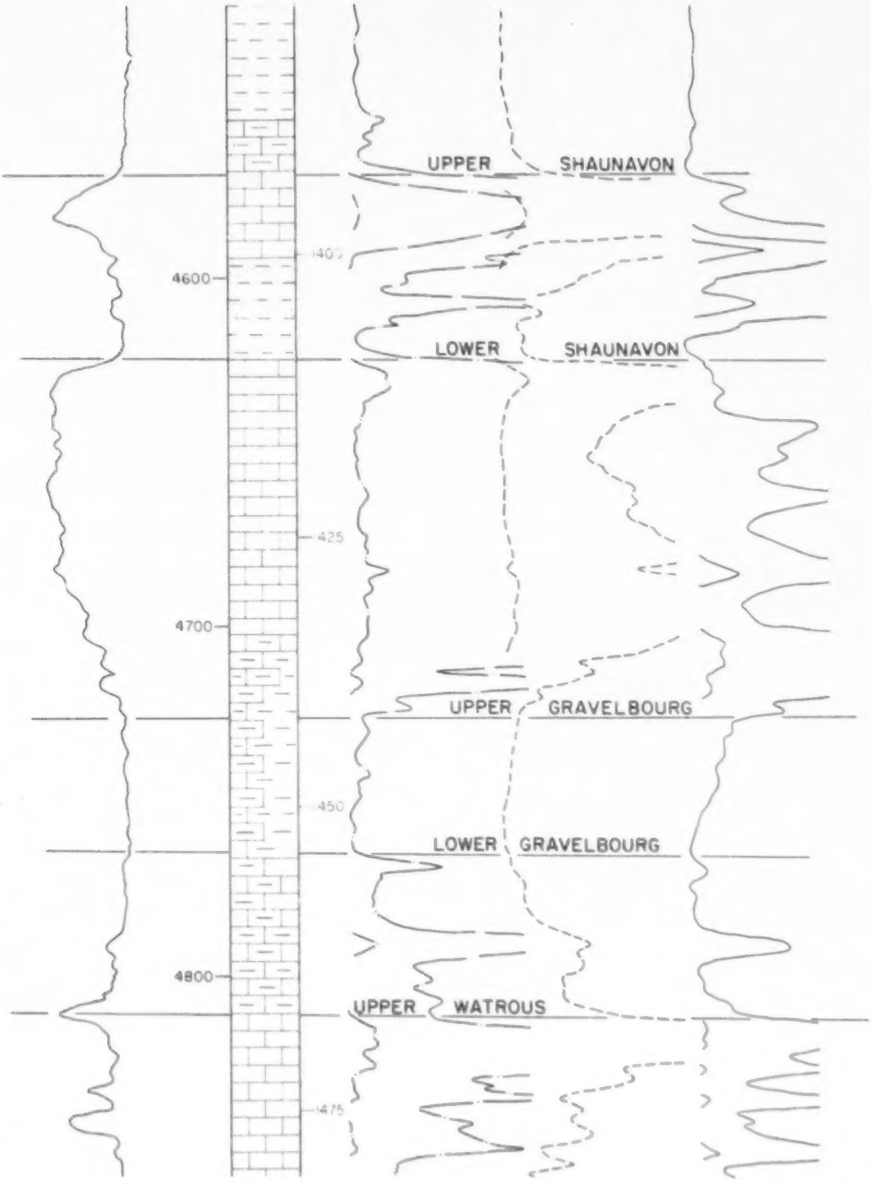
PRODUCING HORIZONS : CANTUAR AND ROSERAY SANDS



# TIDEWATER INSTOW CROWN 11-33

11-33-9-18-W3

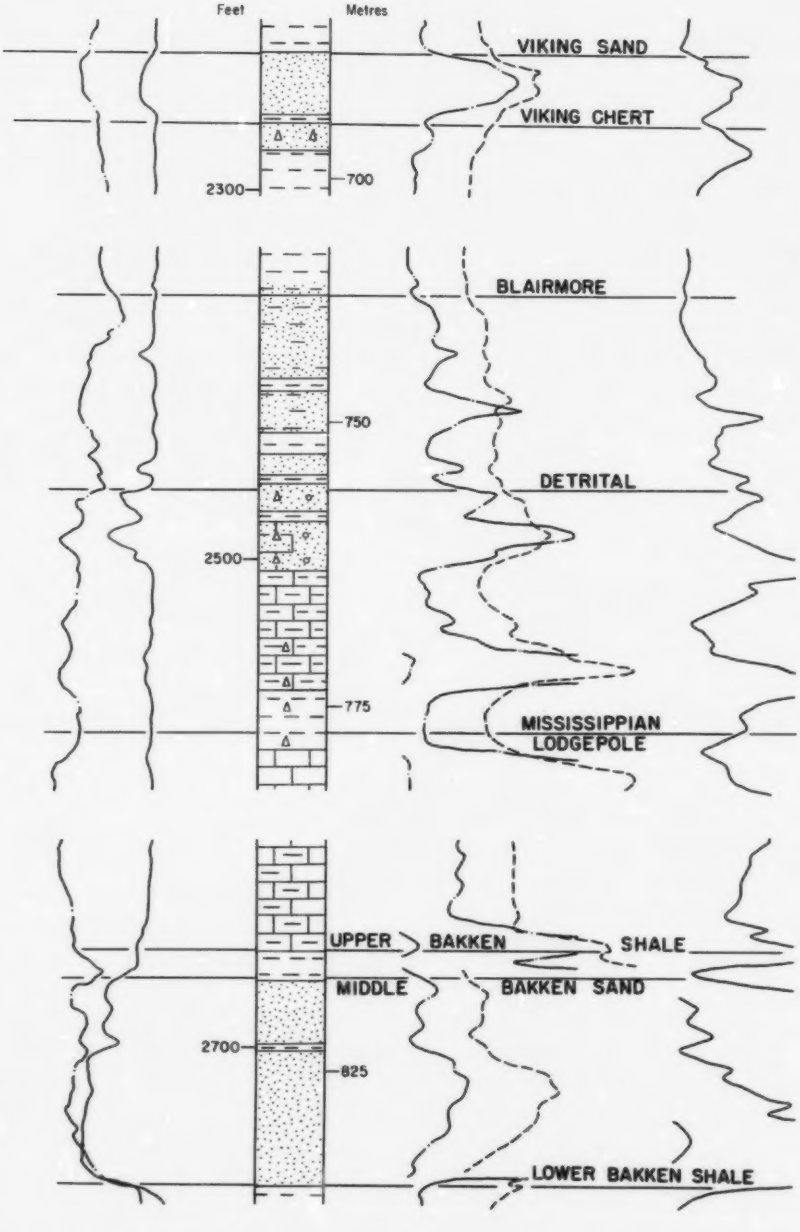
PRODUCING HORIZONS : UPPER AND LOWER SHAUNAVON FORMATIONS



# COLEVILLE UNIT 5-30-31-23

5-30-31-23-W3

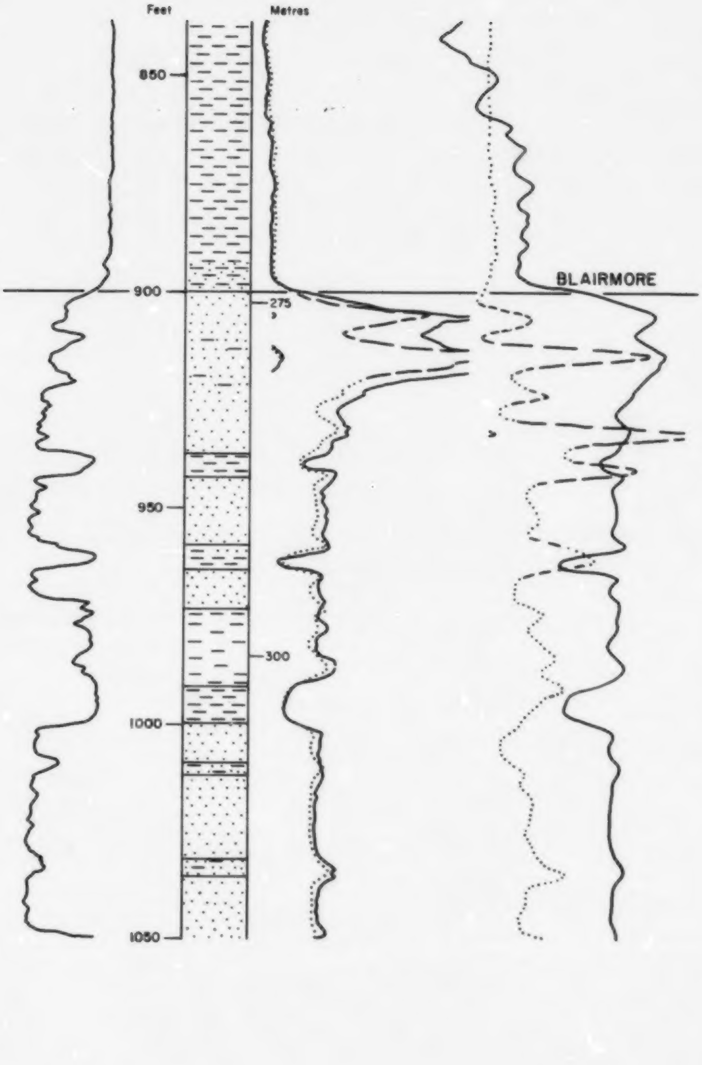
PRODUCING HORIZONS : VIKING AND MIDDLE BAKKEN SANDS


Feet
Metres
VIKING SAND
VIKING CHERT
2300
700
BLAIRMORE
750
DETRITAL
2500
775
MISSISSIPPIAN
LODGEPOLE
UPPER
BAKKEN
SHALE
MIDDLE
BAKKEN SAND
2700
825
LOWER BAKKEN SHALE

## SPC BEACON HILL 10-17-61-24

10-17-61-24-W3

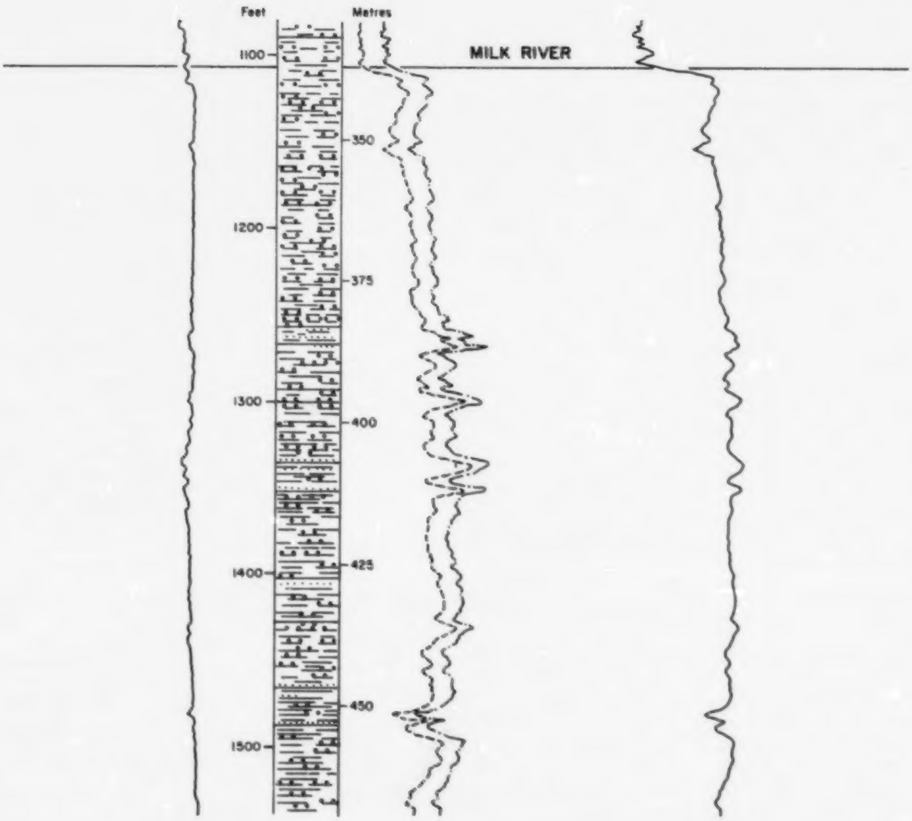
PRODUCING HORIZON : BLAIRMORE


Feet
Metres
850
900
275
950
300
1000
1050
BLAIRMORE

# PRECAM ET AL HATTON 11-21-17-25

11-21-17-25w3

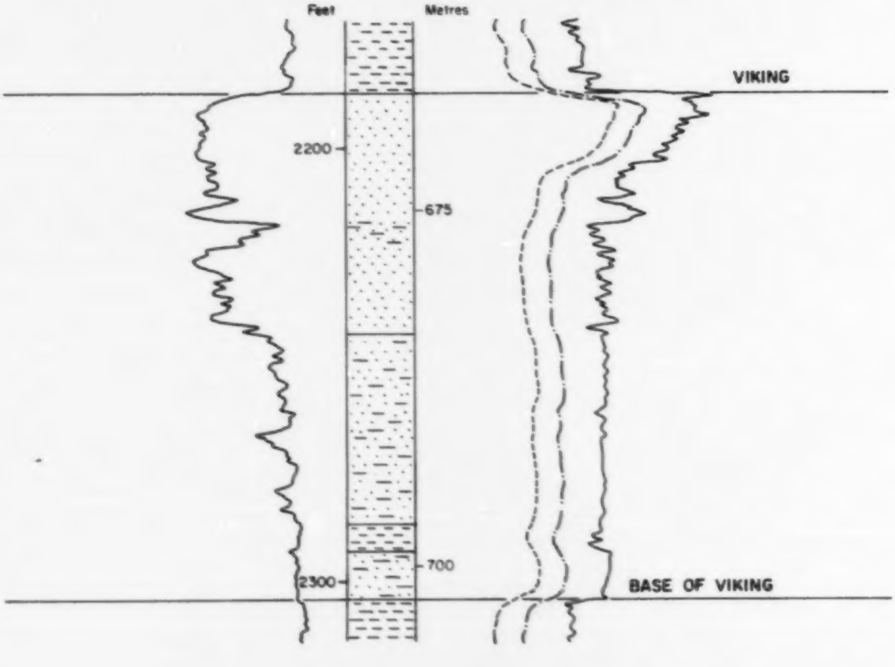
PRODUCING HORIZON : MILK RIVER SAND



## IMP BAYHURST 11-19V-24-25

11-19-24-25-W3

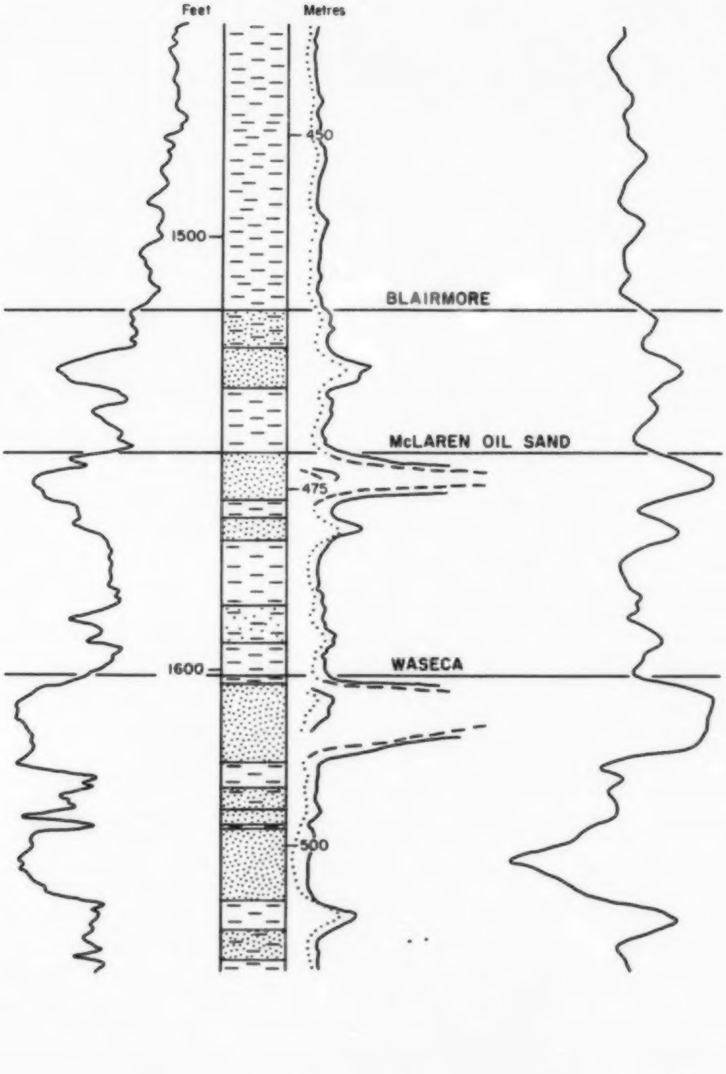
PRODUCING HORIZON : VIKING SAND


Feet
Metres
VIKING
2200
675
700
2300
BASE OF VIKING

# HUSKY BIG GULLY C6-27-49-25

C6-27-49-25-W3

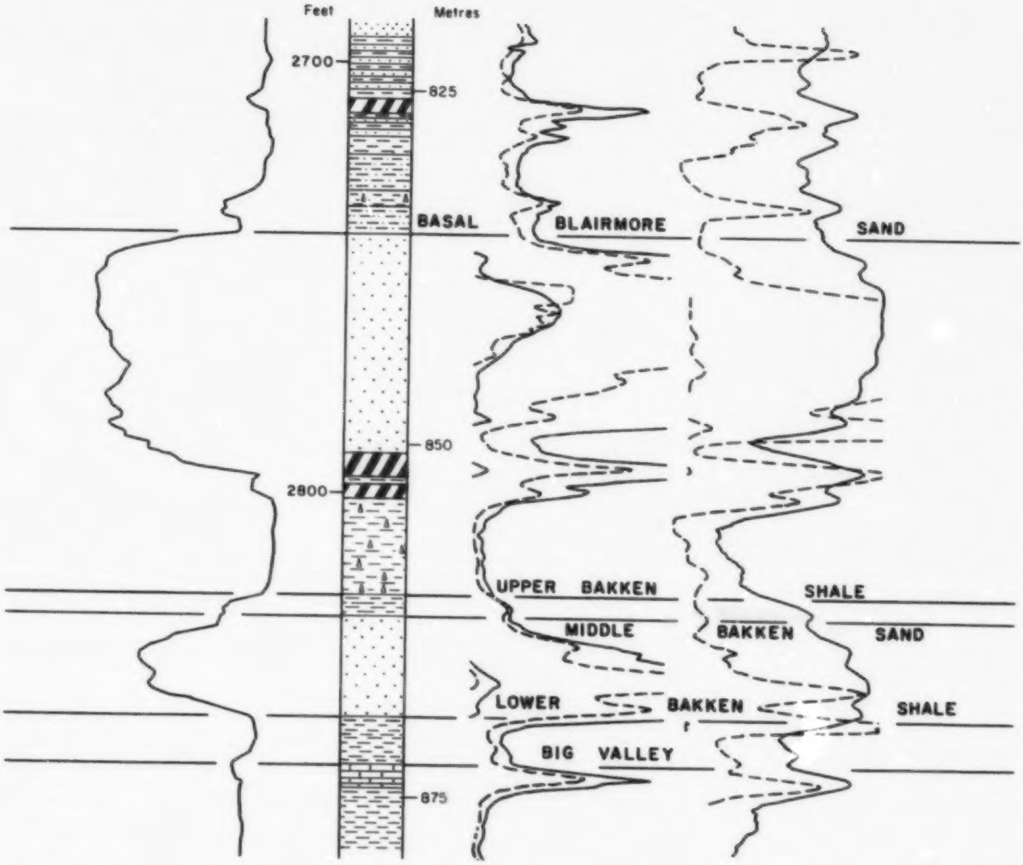
PRODUCING HORIZONS : McLAREN AND WASECA SANDS


Feet
Metres
450
1500
BLAIRMORE
McLAREN OIL SAND
475
WASECA
1600
500

## HUSKY N. HOOSIER 6-14-32-27

6-14-32-27-W3

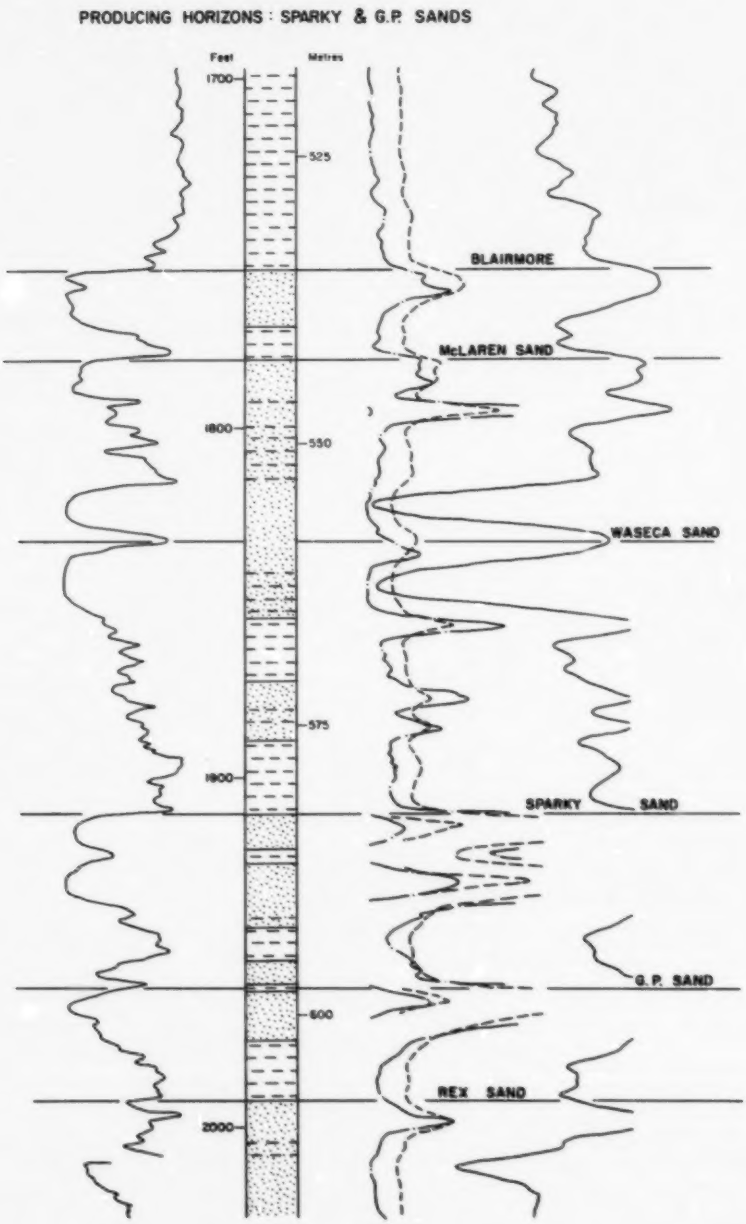
PRODUCING HORIZON : BASAL BLAIRMORE


Feet
Metres
2700
825
BASAL
BLAIRMORE
SAND
850
2800
UPPER BAKKEN
SHALE
MIDDLE
BAKKEN
SAND
LOWER
BAKKEN
SHALE
BIG VALLEY
875

## CDN RES EPPING A14-30-47-27

14-30-47-27-W3

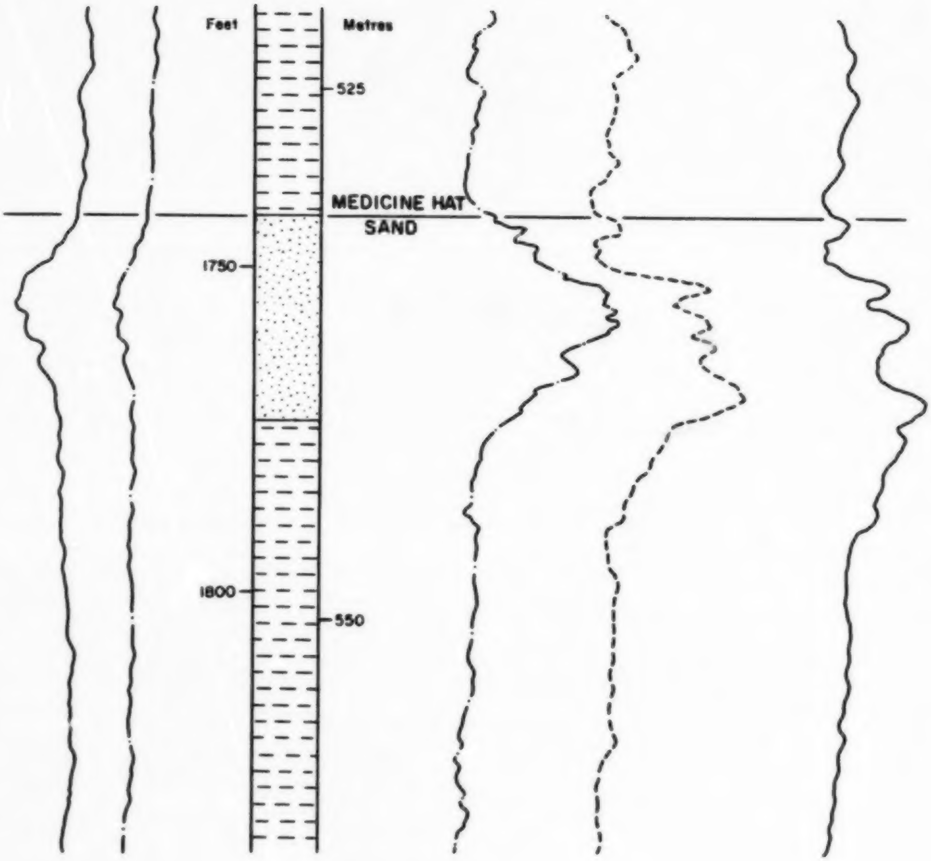
PRODUCING HORIZONS : SPARKY & G.P. SANDS


PRODUCING HORIZONS : SPARKY & G.P. SANDS
Feet
Metres
1700
525
1800
550
575
1900
600
2000
BLAIRMORE
McLAREN SAND
WASECA SAND
SPARKY SAND
G.P. SAND
REX SAND

# N C O HORSHAM 10-7-16-29

10-7-16-29-W3

PRODUCING HORIZON : MEDICINE HAT SAND


Feet
Metres
525
MEDICINE HAT
SAND
1750
1800
550

# POOL PRESSURE DATA

# INITIAL OIL POOL PRESSURE DATA

| POOL NAME | DATUM METRES SUBSEA | PRESSURE GRADIENT kPA/m | TEMPERATURE AT DATUM DEPTH °C | VIRGIN PRESSURE AT DATUM DEPTH MPa | SATURATION PRESSURE |
|---|---|---|---|---|---|
| Aberfeldy Sparky Sand | +80.8 | | | | |
| Alameda Midale Beds: | | | | | |
| (Central Group) | 792.5 | 7.24 | 57 | 15.39 | 10.64 MPa @ 57°C |
| (East Group) | 746.8 | 7.24 | 57 | 15.27 | 10.80 MPa @ 57°C |
| Alameda West Frobisher Beds | 786.6 | | | | |
| Alameda West Midale Beds | 765.5 | | | | |
| Alida East Frobisher-Alida Beds | 536.4 | 7.67 | 44 | 10.47 | 10.47 MPa @ 43°C |
| Alida North Alida Beds | 564.8 | | | | |
| Alida West Frobisher-Alida Beds | 545.6 | 7.67 | 45 | 10.54 | 10.54 MPa @ 45°C |
| Alsask Basal Blairmore Sand | 91.4 | 9.27 | 33 | | |
| Antelope Lake Upper Shaunavon | 300.2 | 8.82 | 49 | 10.00 | |
| Arcola Frobisher-Alida Beds | 570.0 | 8.37 | 53 | 11.00 | 8.77 MPa @ 53°C |
| Auburnton Frobisher-Alida Beds | 607.7 | | | | |
| Avon Hill Viking | 13.7 | 8.37 | 23 | 6.72 | |
| Baldwinton Sparky Sand | +43.7 | | | | |
| Battrum North Roseray Sand | 172.4 | | | | |
| Battrum Roseray Sand | 179.8 | 8.82 | 46 | 8.56 | 1.39 MPa @ 43°C |
| Bench Upper Shaunavon | 438.9 | 8.82 | | 12.45 | |
| Benson Midale Beds | 754.4 | 7.92 | 68 | 14.38 | |
| Beverley Cantuar Sand | 243.8 | 9.05 | 48 | 9.11 | 9.11 MPa @ 48°C |
| Beverley North Cantuar Sand | 232.9 | | | | |
| Beverley Upper Roseray Sand | 246.9 | 8.78 | | | |
| Bienfait Midale Beds | 1005.7 | | | | |
| Big Gully McLaren Sand | +141.7 | | | | |
| Big Gully Waseca Sand | +125.0 | | | | |
| Bone Creek Upper Shaunavon | 464.8 | 8.60 | 48 | 12.27 | 4.78 MPa @ 49°C |
| Bromhead Midale Beds | 1098.0 | 8.60 | | 17.65 | |
| Browning Frobisher-Alida Beds | 682.8 | 7.24 | 59 | 12.55 | |
| Bryant Frobisher Beds | 836.2 | | | | |
| Bryant Midale Beds | 807.4 | | | | |
| Buffalo Coulee Bakken Sand | 108.2 | 9.66 | 26 | | 2.21 MPa @ 26°C |
| Buffalo Coulee North Bakken Sand | 93.0 | | | | |
| Butte Upper Shaunavon | 417.6 | 8.82 | 49 | 12.37 | 1.23 MPa @ 49°C |
| Buzzard Lloydminster Sand | +38.4 | | | | |
| Cactus Lake Basal Mannville Bakken Sand | 97.1 | | | | |
| Cantal Frobisher-Alida Beds | 579.1 | 6.79 | 47 | 10.87 | 10.85 MPa @ 47°C |
| Cantal South Frobisher-Alida Beds | 579.1 | | | | |
| Cantuar East Cantuar Sand | 228.6 | 8.60 | 51 | | |
| Cantuar East Roseray Sand | 228.6 | 8.60 | 51 | | |
| Cantuar Lower Roseray Sand | 228.6 | 8.78 | 51 | 9.10 | 9.10 MPa @ 52°C |
| Cantuar Main Cantuar Sand | 227.1 | 8.78 | 51 | 8.95 | 8.95 MPa @ 52°C |

## INITIAL OIL POOL PRESSURE DATA

| POOL NAME | DATUM METRES SUBSEA | PRESSURE GRADIENT kPA/m | TEMPERATURE AT DATUM DEPTH °C | VIRGIN PRESSURE AT DATUM DEPTH MPa | SATURATION PRESSURE |
|---|---|---|---|---|---|
| Carnduff Frobisher Beds | 752.9 | 7.24 | 59 | 12.98 | |
| Carnduff Midale Beds | 723.9 | 7.24 | 58 | 15.17 | |
| Celtic G.P. Sand | +108.5 | | | | |
| Celtic Sparky Sand | +118.9 | | | | |
| Celtic Waseca Sand | +140.2 | | | | |
| Clarilaw Frobisher-Alida Beds | 623.3 | 7.24 | 58 | 11.78 | |
| Clarilaw West Frobisher-Alida Beds | 619.7 | | | | |
| Clintonville Shaunavon | 456.8 | | | | |
| Coleville Bakken Sand | 109.7 | 9.50 | | | |
| Coleville Mannville Sand | 54.9 | | | | |
| Coleville South Bakken Sand | 127.4 | | | | |
| Coleville South Mannville Sand | 68.1 | | | | |
| Cosine Lake Lloydminster Sand | 100.6 | | | | |
| Court Bakken Sand | 129.8 | | | | |
| Covington Upper Shaunavon | 416.1 | 8.82 | 52 | 11.94 | 3.52 MPa @ 51°C |
| Covington West Upper Shaunavon | 417.6 | 8.82 | | | |
| Crystal Hill Souris Valley Beds | 434.3 | 8.37 | | 9.19 | |
| Dalesboro Frobisher-Alida Beds | 670.6 | 8.37 | 56 | 12.00 | |
| Dee Valley East Sparky Sand | +79.2 | | | | |
| Dee Valley East Waseca Sand | +102.1 | | | | |
| Dee Valley Waseca Sand | 103.6 | | | | |
| Delta Upper Shaunavon | 306.3 | 8.82 | 46 | 10.57 | 7.46 MPa @ 47°C |
| Dodsland Viking Sand | +4.6 | 7.99 | 23 | 6.41 | 6.41 MPa @ 23°C |
| Dollard Upper Shaunavon | 434.3 | 8.60 | 59 | 11.80 | 6.32 MPa @ 60°C |
| Druid Mannville Sands | 59.0 | | | | |
| Dulwich North Sparky Sand | +86.9 | | | | |
| Dulwich Sparky Sand | +79.2 | | | | |
| Eastbrook Upper Shaunavon | 461.8 | 9.05 | 54 | 15.70 | |
| Eastend Shaunavon | 470.3 | | | | |
| Edam Waseca Sand | +119.2 | | | | |
| Edam West Mannville Sand | +109.9 | | | | |
| Edam West Sparky/G.P. Sand | +92.7 | | | | |
| Edam West Waseca Sand | +115.6 | | | | |
| Edenvale Tilston Beds | 533.4 | 7.69 | 43 | | |
| Elmore Frobisher Beds | 701.0 | 7.92 | 52 | 12.05 | 6.83 MPa @ 51°C |
| Elmore Midale Beds | 685.8 | 7.69 | 52 | 14.33 | |
| Epping G.P. Sand | +57.9 | | | | |
| Epping Sparky Sand | +67.1 | | | | |
| Eureka Viking | 18.3 | 7.99 | 23 | 6.12 | 4.43 MPa @ 26°C |
| Eyehill Cummings Sand | 89.9 | | | | |
| Fertile Tilston Beds | 437.0 | | | | |

## INITIAL OIL POOL PRESSURE DATA

| POOL NAME | DATUM METRES SUBSEA | PRESSURE GRADIENT kPA/m | TEMPERATURE AT DATUM DEPTH °C | VIRGIN PRESSURE AT DATUM DEPTH MPa | SATURATION PRESSURE |
|---|---|---|---|---|---|
| Fertile Tilston-Souris Valley Beds | 434.4 | | | | |
| Flat Lake Ratcliffe Beds | 1271.0 | 8.37 | 73 | 20.15 | 9.80 MPa @ 81°C |
| Florence Frobisher Beds | 789.4 | 8.37 | 57 | 13.28 | |
| Forest Bank Mannville Sands | +115.8 | | | | |
| Forest Bank Sparky Sand | +99.1 | | | | |
| Forest Bank Waseca Sand | +120.4 | | | | |
| Forgan Viking Sand | 9.2 | | | | |
| Fosterton Roseray Sand: | | | | | |
| Middle (II) Roseray Sand | 221.0 | 8.82 | 52 | 9.10 | |
| Lower (I) Roseray Sand | 221.0 | 8.82 | 52 | 9.10 | |
| Northwest Group | 218.5 | 8.82 | 52 | | |
| Fosterton South Cantuar Sand | 224.0 | | | | |
| Fosterton South Roseray Sand | 229.6 | | | | |
| Freda Lake Ratcliffe Beds | 960.1 | 8.37 | | 18.56 | |
| Freemont Sparky Sand | +43.8 | | | | |
| Freemont Waseca Sand | +62.5 | | | | |
| Freestone Frobisher-Alida Beds | 570.0 | 7.92 | 54 | 11.29 | |
| Frys East Tilston-Souris Valley Beds | 395.4 | | | | |
| Frys Tilston-Souris Valley Beds | 402.3 | 8.37 | | | |
| Furness Sparky Sand | +73.2 | | | | |
| Fusilier Bakken Sand | 121.9 | 9.27 | | | |
| Gainsborough Frobisher-Alida Beds | 579.1 | 7.24 | 44 | | |
| Glen Ewen Frobisher Beds | 751.3 | 7.24 | 56 | | |
| Glen Ewen Midale Beds | 728.5 | 7.24 | 56 | 15.17 | |
| Golden Lake North Sparky Sand | +96.0 | | | | |
| Golden Lake North Waseca Sand | +121.9 | | | | |
| Golden Lake South Sparky Sand | +96.0 | | | | |
| Golden Lake South Waseca Sand | +115.8 | | | | |
| Griffin Frobisher Beds | 690.4 | 8.60 | 62 | | |
| Gull Lake Basal Cantuar Sand | 300.2 | 8.82 | 47 | | 8.79 MPa @ 47°C |
| Gull Lake Central Upper Shaunavon | 387.1 | 8.82 | 51 | | |
| Gull Lake North Upper Shaunavon | 365.8 | 8.82 | 48 | 11.11 | 1.10 MPa @ 46°C |
| Gull Lake South Upper Shaunavon | 402.3 | 8.82 | 52 | 11.71 | |
| Gully Lake Waseca Sand | +103.6 | | | | |
| Handsworth Alida Beds | 536.4 | 8.60 | 51 | 10.99 | |
| Hartaven Frobisher-Alida Beds | 577.6 | 8.60 | 56 | 11.58 | |
| Hastings East Frobisher Beds | 598.7 | | | | |
| Hastings Frobisher Beds | 643.1 | 6.79 | 49 | 11.65 | 11.65 MPa @ 50°C |
| Hazelwood Tilston Beds | 425.2 | 8.37 | 43 | 9.53 | |
| Hazlet Roseray Sand | 205.7 | 9.05 | 47 | 9.13 | 5.60 MPa @ 47°C |
| Hearts Hill Bakken Sand | 64.9 | | | | |

# INITIAL OIL POOL PRESSURE DATA

| POOL NAME | DATUM METRES SUBSEA | PRESSURE GRADIENT kPA/m | TEMPERATURE AT DATUM DEPTH °C | VIRGIN PRESSURE AT DATUM DEPTH MPa | SATURATION PRESSURE |
|---|---|---|---|---|---|
| Hoffer Ratcliffe Lower Beds | 1248.2 | 8.60 | | 19.47 | |
| Hoffer Ratcliffe Upper Beds | 1231.4 | 8.60 | | 19.33 | |
| Hoosier Bakken Sand | 150.9 | 9.50 | | | |
| Hume Frobisher Beds | 739.1 | 8.60 | 64 | 13.21 | |
| Hume Midale Beds | 723.9 | 8.60 | | 14.23 | |
| Hummingbird Birdbear | 1585.0 | 8.14 | 82 | 23.16 | 8.09 MPa @ 82°C |
| Hummingbird Ratcliffe Beds | 1155.2 | 8.60 | 71 | 18.70 | 6.03 MPa @ 71°C |
| Huntoon Frobisher Beds | 754.4 | 8.60 | 61 | | |
| Huntoon Midale Beds | 737.6 | 8.60 | 55 | | |
| Illerbrun Upper Shaunavon | 414.5 | 8.82 | 49 | 11.86 | 3.15 MPa @ 49°C |
| Ingoldsby Frobisher-Alida Beds | 548.6 | 7.89 | 46 | 10.51 | 4.81 MPa @ 45°C |
| Ingoldsby West Frobisher-Alida Beds | 659.6 | | | | |
| Innes Frobisher Beds | 719.3 | 8.60 | 63 | 12.98 | 7.78 MPa @ 61°C |
| Instow Upper Shaunavon | 464.8 | 8.60 | 48 | 12.27 | 4.78 MPa @ 49°C |
| Java Cantuar Sand | 242.3 | | | | |
| Johnston Upper Shaunavon | 371.9 | 8.82 | 48 | 9.24 | |
| Kenosee Tilston Beds | 426.7 | 7.92 | 46 | 9.38 | |
| Kerrobert Viking Sand | 3.0 | | | | |
| Kisbey Birdbear | 1018.3 | | | | |
| Lake Alma Ratcliffe Beds | 1268.0 | 8.37 | 67 | 20.27 | |
| Landrose McLaren Sand | + 144.8 | | | | |
| Landrose Waseca Sand | + 129.5 | | | | |
| Lashburn South Sparky Sand | + 93.7 | | | | |
| Lashburn South Waseca Sand | + 117.3 | | | | |
| Lashburn Waseca Sand | + 126.5 | | | | |
| Lashburn West Sparky Sand | + 81.4 | | | | |
| Leitchville Shaunavon | 452.6 | 8.60 | 50 | 12.51 | 4.78 MPa @ 49°C |
| Leon Lake Shaunavon | 457.2 | 8.60 | 52 | 10.69 | 5.52 MPa @ 41°C |
| Lightning Tilston Beds | 449.6 | 7.92 | 46 | 9.39 | |
| Lloydminster Sparky Sand | + 83.8 | | | | |
| Lone Rock Sparky Sand | + 71.6 | | | | |
| Lost Horse Hill Frobisher-Alida Beds | 559.3 | 8.14 | 57 | 11.40 | 3.36 MPa @ 55°C |
| Lougheed Midale Beds | 807.7 | 8.14 | 61 | | |
| Loverna Detrital | 126.5 | 8.60 | | | |
| Low Lake Waseca Sand | + 111.3 | | | | |
| Lucky Hills Viking | 7.6 | 8.37 | | | |
| Luseland Bakken Sand | 44.9 | | | | |
| Macklin Sparky Sand | 39.6 | | | | |
| Macoun Midale Beds | 946.4 | 8.82 | 63 | | 9.32 MPa @ 63°C |
| Macoun West Midale Beds | 978.3 | | | | |
| Maidstone McLaren Sand | + 126.1 | | | | |

# INITIAL OIL POOL PRESSURE DATA

| POOL NAME | DATUM METRES SUBSEA | PRESSURE GRADIENT kPA/m | TEMPERATURE AT DATUM DEPTH °C | VIRGIN PRESSURE AT DATUM DEPTH MPa | SATURATION PRESSURE |
|---|---|---|---|---|---|
| Maidstone Waseca Sand | +113.4 | | | | |
| Main Success Roseray Sand | 225.6 | 8.60 | 50 | 9.06 | 8.67 MPa @ 59°C |
| Manito Lake Sparky Sand | +27.7 | | | | |
| Marsden South Sparky Sand | +31.7 | | | | |
| Marsden Sparky Sand | +36.1 | | | | |
| Melrose Frobisher-Alida Beds | 551.7 | 8.14 | 54 | | |
| Midale Central Frobisher Beds | 786.4 | 7.69 | 63 | 14.31 | 5.24 MPa @ 57°C |
| Midale Central Midale Beds | 800.1 | 7.92 | 63 | 14.31 | 6.09 MPa @ 63°C |
| Minard Midale Beds | 738.5 | | | | |
| Moose Mountain Tilston Beds | 435.9 | 8.48 | 46 | 9.45 | 3.14 MPa @ 41°C |
| Moose Valley Tilston Beds | 428.2 | 8.60 | | | |
| Morrisview Frobisher-Alida Beds | 661.4 | 8.37 | 48 | 12.37 | |
| Neilburg McLaren Sand | +103.9 | | | | |
| Neptune Ratcliffe Beds | 1034.8 | 8.37 | | | |
| North Antler Midale Beds | 658.4 | 8.14 | 56 | 13.98 | |
| Northgate Frobisher Beds | 1033.3 | 8.14 | 63 | | |
| Northgate Midale Beds | 1021.1 | 7.24 | 71 | 18.03 | 14.48 MPa @ 70°C |
| North Handsworth Alida Beds | 538.0 | 8.60 | 55 | 11.08 | |
| North Hoosier Bakken Sand | 135.3 | 9.50 | 31 | 7.74 | 7.79 MPa @ 31°C |
| North Hoosier Basal Blairmore Sand | 120.4 | 9.34 | 29 | 5.85 | |
| Northminster North G.P. Sand | +83.2 | | | | |
| Northminster North Sparky Sand | +94.1 | | | | |
| Northminster Sparky Sand | +91.4 | | | | |
| North Premier Roseray Sand | 228.6 | 8.60 | 47 | 9.25 | 3.12 MPa @ 47°C |
| North Premier Upper Shaunavon | 310.9 | 8.82 | 57 | 10.31 | 0.89 MPa @ 49°C |
| North Smiley Bakken Sand | 97.0 | | | | |
| Nottingham Alida Beds | 548.6 | 7.15 | 43 | 10.60 | 10.66 MPa @ 44°C |
| Oakley Frobisher Beds | 582.2 | 6.72 | 46 | 10.95 | 10.95 MPa @ 47°C |
| Oungre Ratcliffe Beds | 1188.7 | 8.14 | 70 | 18.96 | 8.07 MPa @ 74°C |
| Parkman Souris Valley Beds | 416.1 | 8.37 | 49 | 9.09 | |
| Parkman South Tilston-Souris Valley Beds | 455.7 | 8.23 | 38 | 9.45 | |
| Parkman Tilston Beds | 442.0 | 7.92 | 43 | 9.51 | 2.79 MPa @ 43°C |
| Parkman Tilston-Souris Valley Beds | 402.3 | 7.92 | 38 | 9.10 | 2.41 MPa @ 38°C |
| Pennant Upper Shaunavon | 265.2 | 9.05 | | | |
| Pikes Peak G.P. Sand | +81.0 | | | | |
| Pikes Peak Sparky Sand | +91.4 | | | | |
| Pikes Peak Waseca Sand | +123.4 | | | | |
| Pinto Frobisher Beds | 1036.3 | 7.01 | 66 | 16.55 | |
| Pinto Midale Beds | 1024.1 | 7.01 | 70 | 17.24 | 13.85 MPa @ 70°C |
| Plato North Viking Sand | 20.8 | | | | |
| Plato Viking Sand | 9.1 | 8.37 | 24 | 6.89 | 3.28 MPa @ 21°C |

# INITIAL OIL POOL PRESSURE DATA

| POOL NAME | DATUM METRES SUBSEA | PRESSURE GRADIENT kPA/m | TEMPERATURE AT DATUM DEPTH °C | VIRGIN PRESSURE AT DATUM DEPTH MPa | SATURATION PRESSURE |
|---|---|---|---|---|---|
| Plover Lake Bakken Sand | 86.6 | | | | |
| Queensdale East Frobisher-Alida Beds | 573.0 | 5.78 | 47 | 10.84 | 7.72 MPa @ 46°C |
| Queensdale North Alida Beds | 588.3 | 7.58 | 49 | 10.85 | |
| Queensdale West Alida Beds | 600.5 | 7.58 | 48 | 11.25 | 11.24 MPa @ 48°C |
| Ralph Midale Beds | 723.9 | 7.92 | | | |
| Rapdan Upper Shaunavon | 449.6 | 8.60 | 49 | 13.72 | 5.61 MPa @ 56°C |
| Red Jacket Shaunavon-Gravelbourg | 82.7 | | | | |
| Rocanville Bakken Sand | 160.0 | 8.37 | 27 | 6.23 | |
| Roncott Bakken Sand | 1121.7 | 8.08 | 59 | | 2.05 MPa @ 52°C |
| Rosebank Alida Beds | 536.4 | 7.19 | 44 | 10.49 | |
| Rosebank South Alida Beds | 533.4 | 7.46 | 43 | | |
| Rush Lake Sparky Sand | +88.3 | | | | |
| Rush Lake Waseca Sand | +113.9 | | | | |
| Salt Lake Lloydminster Sand | 56.2 | | | | |
| Senlac Lloydminster Sand | 78.2 | | | | |
| Sherwood Frobisher Beds | 701.0 | 7.92 | 56 | 12.27 | 8.76 MPa @ 56°C |
| Silverdale Sparky Sand | +68.6 | | | | |
| Silverton Frobisher Beds | 618.7 | 8.37 | 49 | | |
| Skinner Lake Ratcliffe Beds | 1008.9 | 8.37 | | | |
| Smiley Dewar Viking | 15.2 | 7.99 | 23 | 6.47 | 6.36 MPa @ 22°C |
| Smiley Dewar Viking Chert | 18.3 | 7.99 | 23 | 6.49 | |
| Souris Flat Frobisher Beds | 789.4 | 8.28 | 59 | 13.34 | 11.82MPa @ 59°C |
| South Fletwode Tilston Beds | 429.8 | 7.92 | 44 | 9.45 | |
| South Success Roseray Sand | 231.0 | 8.60 | 51 | 8.96 | 8.96 MPa @ 53°C |
| Standard Hill Waseca Sand | +109.7 | | | | |
| Star Valley Frobisher-Alida Beds | 536.4 | 7.46 | 52 | 10.82 | 8.61 MPa @ 52°C |
| Steelman Frobisher Beds | 853.4 | 7.01 | 67 | 14.36 | |
| Steelman Midale Beds | 853.4 | 7.01 | 67 | 14.34 | 14.34 MPa @ 63°C |
| Storthoaks Alida-Tilston Beds | 493.8 | 7.92 | 38 | 9.80 | 8.09 MPa @ 42°C |
| Stoughton Frobisher-Alida Beds | 644.7 | 7.46 | 61 | 12.07 | 8.09 MPa @ 62°C |
| Stoughton South Frobisher Beds | 647.7 | 7.46 | | 14.13 | |
| Success North Roseray Sand | 236.9 | | | | |
| Success Roseray Sand Alpha | 219.5 | 8.60 | 51 | 8.76 | 7.86 MPa @ 51°C |
| Suffield Roseray Sand | 259.1 | 8.60 | 52 | 12.98 | 7.41 MPa @ 44°C |
| Suffield Upper Shaunavon | 318.5 | 8.82 | 50 | 10.82 | |
| Tangleflags East McLaren Sand | +139.6 | | | | |
| Tangleflags G.P. Sand | +100.6 | | | | |
| Tangleflags Lloydminster Sand | +61.0 | | | | |
| Tangleflags McLaren Sand | +141.4 | | | | |
| Tangleflags North Cummings Sand | +50.3 | | | | |
| Tangleflags North G.P. Sand | +99.1 | | | | |

## INITIAL OIL POOL PRESSURE DATA

| POOL NAME | DATUM METRES SUBSEA | PRESSURE GRADIENT kPA/m | TEMPERATURE AT DATUM DEPTH °C | VIRGIN PRESSURE AT DATUM DEPTH MPa | SATURATION PRESSURE |
|---|---|---|---|---|---|
| Tangleflags North Lloydminster Sand | +51.8 | | | | |
| Tangleflags Sparky Sand | +109.7 | | | | |
| Tangleflags West G.P. Sand | +102.9 | | | | |
| Tangleflags West Lloydminster Sand | +62.4 | | | | |
| Tangleflags West Sparky Sand | +113.5 | | | | |
| Tatagwa Midale Beds | 857.4 | | | | |
| Verlo Roseray Sand | 213.4 | 8.82 | 52 | 9.14 | 9.24 MPa @ 39°C |
| Viewfield Frobisher Beds | 670.6 | 8.69 | 65 | 12.22 | 9.03 MPa @ 65°C |
| View Hill Midale Beds | 957.1 | 8.75 | 76 | 15.69 | |
| Wapella Sand | 76.2 | 8.37 | 32 | 5.25 | 0.34 MPa @ 29°C |
| Warmley Alida Beds | 496.2 | 8.37 | 54 | 10.15 | |
| Wauchope Alida-Tilston Beds | 524.1 | | | | |
| Weir Hill Frobisher Beds | 762.0 | 7.24 | | | |
| Westhazel G.P. Sand | +90.1 | | | | |
| Westhazel Sparky Sand | +103.8 | | | | |
| West Innes Frobisher Beds | 722.4 | 8.60 | 64 | 13.07 | |
| West Kingsford Midale Beds | 876.3 | 7.01 | 67 | 14.82 | 9.40 MPa @ 67°C |
| Weyburn Frobisher Beds | 807.7 | 8.14 | 61 | | |
| Weyburn Midale Beds | 807.7 | 8.14 | 61 | 14.60 | |
| Weyburn North Frobisher Beds | 787.1 | | | | |
| Weyburn North Midale Beds | 766.9 | | | | |
| White Bear Tilston Beds | 445.0 | 7.92 | 43 | 9.74 | |
| White Bear Tilston-Souris Valley Beds | 457.2 | 8.37 | 39 | 9.47 | 2.41 MPa @ 39°C |
| Whitemud Shaunavon | 469.4 | 9.05 | 54 | 13.79 | 5.52 MPa @ 41°C |
| Whiteside Viking Sand | 36.6 | 7.92 | 24 | 6.38 | |
| Wildwood Alida Beds | 582.2 | 8.37 | 48 | 10.77 | |
| Willmar Frobisher Alida Beds | 661.4 | 7.24 | 54 | 11.87 | 11.32 MPa @ 53°C |
| Winmore Frobisher Beds | 641.6 | 8.60 | | 11.23 | |
| Winter Cummings Sand | 33.9 | | | | |
| Workman Midale Beds | 685.8 | 7.24 | 54 | 14.75 | 7.64 MPa @ 53°C |
| Workman Frobisher Beds | 701.0 | 7.69 | 54 | 12.27 | 6.55 MPa @ 59°C |

# INITIAL GAS POOL PRESSURE DATA

| POOL NAME | DATUM METRES SUBSEA | TEMPERATURE AT DATUM DEPTH °C | PSEUDO-REDUCED TEMPERATURE | PSEUDO-REDUCED PRESSURE | VIRGIN PRESSURE AT DATUM DEPTH kPa |
|---|---|---|---|---|---|
| Bayhurst Viking Gas Pool | +9.1 | 25 | 1.61 | 1.47 | 6700 |
| Bayhurst West Viking Gas Pool | -7.6 | 28 | 1.60 | 1.47 | 6720 |
| Beacon Hill Mannville Sand Gas Pool | +256.0 | 21 | 1.56 | 0.47 | 2170 |
| Beacon Hill West Mannville Sand Gas Pool | +241.7 | 21 | 1.56 | 0.46 | 2351 |
| Beverley East Cantuar Gas Pool | +170.0 | 46 | 1.67 | 2.11 | 9650 |
| Bigstick Second White Specks Gas Pool | +101.2 | 26 | 1.59 | 0.46 | 6105 |
| Brock Viking Sand Gas Pool | -3.0 | 28 | 1.59 | 1.46 | 6690 |
| Brock East Viking Gas Pool | -7.6 | 29 | 1.62 | 1.55 | 7060 |
| Burstall Medicine Hat Sand Gas Pool | +231.5 | 17 | 1.53 | 0.94 | 4309 |
| Burstall Milk River Gas Pool | +278.8 | 16 | 1.53 | 0.75 | 3447 |
| Burstall North Viking Sand Gas | -11.0 | 27 | 1.71 | 1.59 | 7782 |
| Cavalier Spinney Hill Sand Gas Pool | +162.1 | 18 | 1.60 | 0.70 | 3140 |
| Coleville-Smiley Viking Sand Gas Pool | +12.2 | 24 | 1.50 | 1.40 | 6480 |
| Dodsland North Viking Gas Pool | +21.3 | 23 | 1.50 | 1.33 | 6110 |
| Fort Pitt Mannville Sand Gas Pool | +191.0 | 20 | 1.79 | 0.61 | 2790 |
| Fort Pitt North Mannville Sand Gas Pool | +198.9 | 19 | 1.77 | 0.62 | 2850 |
| Glidden Viking Gas Pool | -1.5 | 22 | 1.57 | 1.47 | 6690 |
| Greenan Viking Gas Pool | -15.2 | 28 | 1.61 | 1.45 | 6580 |
| Gull Lake Cantuar Gas Pool | -259.1 | 43 | 1.59 | 2.05 | 9480 |
| Hatton Medicine Hat Sand Gas Pool | +274.3 | 17 | 1.53 | 0.94 | 4310 |
| Hatton Milk River Gas Pool | +321.6 | 16 | 1.53 | 0.75 | 3450 |
| Hoosier Viking Sand Gas Pool | -18.3 | 26 | 1.52 | 1.43 | 6560 |
| Liebenthal Milk River Gas Pool | +297.2 | 16 | 1.53 | 0.79 | 3630 |
| Lloydminster Colony Sand Gas Pool | +134.1 | 23 | 1.54 | 0.70 | 3260 |
| Marengo Viking Gas Pool | -10.7 | 21 | 1.48 | 1.47 | 6740 |
| Milton Viking Sand Gas Pool | -18.3 | 23 | 1.49 | 1.42 | 6550 |
| Pierceland Mannville Sand Gas Pool | +256.0 | 21 | 1.56 | 0.46 | 2100 |
| Senate Second White Specks Gas Pool | +121.9 | 29 | 1.61 | 1.39 | 6281 |
| Tangleflags Colony Sand Gas Pool | +159.1 | 20 | 1.61 | 0.69 | 3119 |
| Tangleflags McLaren Sand Gas Pool | +149.3 | 21 | 1.55 | 0.71 | 3247 |
| Tangleflags Second White Specks Gas Pool | +274.0 | 18 | 1.54 | 0.67 | 3057 |
| Tangleflags St. Walburg Sand Gas Pool | +254.0 | 18 | 1.55 | 0.73 | 3345 |
| Totnes Viking Gas Pool | -3.0 | 24 | 1.59 | 1.50 | 6830 |
| Whiteside Ribstone Creek Sand Gas Pool | +481.6 | 20 | 1.53 | 0.43 | 2000 |
| Whiteside West Ribstone Creek Sand Gas Pool | +485.3 | 14 | 1.53 | 0.27 | 1240 |
| Whiteside West Viking Sand Gas Pool | -14.4 | 27 | 1.51 | 1.24 | 5940 |

# MPR FACTORS

## MAXIMUM PERMISSIVE RATE FACTORS*

| HORIZON POOL CODE | POOL NAME | AVERAGE INTERSTITIAL WATER (SW) | AVERAGE SHRINKAGE FACTOR (1/Boi) | ASSIGNED AREA | |
|---|---|---|---|---|---|
| | | | | (LSDS) (A) | (ACRES) |
| 232106 | Aberfeldy Sparky Sand Pool | 30 | 90 | 1 | 40 |
| 433007 | Alameda Midale Beds Pool | 35 | 75 | 2 | 80 |
| 435191 | Alameda West Frobisher Beds Pool | 35 | 75 | 2 | 80 |
| 433036 | Alameda West Midale Beds Pool | 35 | 72 | 2 | 80 |
| 435038 | Alida East Frobisher-Alida Beds Pool | 35 | 75 | 1 & 2 | 40 & 80 |
| 435785 | Alida North Alida Beds Pool | 35 | 75 | 1 | 40 |
| 435044 | Alida West Frobisher-Alida Beds Pool | 35 | 72 | 1 | 40 |
| 239022 | Alsask Basal Blairmore Sand Pool | 25 | 75 | 1 | 40 |
| 314552 | Antelope Lake East Roseray Sand Pool | 30 | 93 | 2 | 80 |
| 331064 | Antelope Lake Upper Shaunavon Pool | 25 | 93 | 2 | 80 |
| 435024 | Arcola Frobisher-Alida Beds Pool | 35 | 79 | 1 & 2 | 40 & 80 |
| 435040 | Auburnton Frobisher-Alida Beds Pool | 35 | 75 | 1 | 40 |
| 227331 | Avon Hill Viking Pool | 35 | 90 | 2 | 80 |
| 232135 | Baldwinton Sparky Sand Pool | 30 | 90 | 1 | 40 |
| 430073 | Battle Creek Madison Pool | 25 | 90 | 2 | 80 |
| 331072 | Battle Creek Upper Shaunavon Pool | 25 | 90 | 2 | 80 |
| 314553 | Battrum North Roseray Sand Pool | 41 | 97.5 | 1 | 40 |
| 314546 | Battrum Roseray Sand Pool (Upper) | 41 | 97.5 | 1 & 2 | 40 & 80 |
| | (Main) | 17 | 97.5 | 1 & 2 | 40 & 80 |
| 331060 | Bench Upper Shaunavon Pool | 25 | 75 | 4 | 160 |
| 433075 | Benson Midale Beds Pool | 50 | 89 | 2 & 4 | 80 & 160 |
| 238146 | Beverley Cantuar Sand Pool | 30 | 90 | 2 | 80 |
| 238152 | Beverley East Cantuar Sand Pool | 30 | 90 | 2 | 80 |
| 238148 | Beverley North Cantuar Sand Pool | 30 | 90 | 2 | 80 |
| 314641 | Beverley Upper Roseray Sand Pool | 35 | 90 | 1 | 40 |
| 433035 | Bienfait Midale Beds Pool | 35 | 85 | 2 | 80 |
| 231202 | Big Gully McLaren Sand Pool | 30 | 90 | 1 | 40 |
| 231309 | Big Gully Waseca Sand Pool | 30 | 90 | 1 | 40 |
| 331050 | Bone Creek Upper Shaunavon Pool | 15 | 94 | 2 | 80 |
| 433089 | Bromhead Midale Beds Pool | 35 | 75 | 4 | 160 |
| 435019 | Browning Frobisher-Alida Beds Pool | 35 | 75 | 2 | 80 |
| 435172 | Bryant Frobisher Beds Pool | 35 | 75 | 4 | 160 |
| 433099 | Bryant Midale Beds Pool | 35 | 89 | 4 | 160 |
| 441422 | Buffalo Coulee Bakken Sand Pool | 25 | 93 | 1/2 | 20 |
| 441428 | Buffalo Coulee North Bakken Sand Pool | 25 | 93 | 1 | 40 |
| 331059 | Butte Upper Shaunavon Pool | 25 | 96 | 4 | 160 |
| 234133 | Buzzard Lloydminster Sand Pool | 30 | 90 | 1 | 40 |
| 441426 | Cactus Lake Basal Mannville - Bakken Sand Pool | 25 | 95 | 1 | 40 |

## MAXIMUM PERMISSIVE RATE FACTORS*

| HORIZON POOL CODE | POOL NAME | AVERAGE INTERSTITIAL WATER (SW) | AVERAGE SHRINKAGE FACTOR (1/Boi) | ASSIGNED AREA (LSDS) (A) | (ACRES) |
|---|---|---|---|---|---|
| 435005 | Cantal Frobisher-Alida Beds Pool | 35 | 75 | 1 & 2 | 40 & 80 |
| 435039 | Cantal South Frobisher-Alida Beds Pool | 35 | 75 | 2 | 80 |
| 238143 | Cantuar East Cantuar Sand Pool | 30 | 90 | 2 | 80 |
| 314550 | Cantuar East Roseray Sand Pool | 35 | 90 | 2 | 80 |
| 314741 | Cantuar Lower Roseray Sand Pool | 35 | 95 | 1 | 40 |
| 238141 | Cantuar Main Cantuar Sand Pool | 30 | 90 | 1 | 40 |
| 314555 | Cantuar North Roseray Sand Pool | 35 | 95 | 2 | 80 |
| 435180 | Carnduff Frobisher Beds Pool | 35 | 75 | 2 | 80 |
| 433006 | Carnduff Midale Beds Pool | 35 | 75 | 2 | 80 |
| 232511 | Celtic G.P. Sand Pool | 30 | 90 | 1 | 40 |
| 230903 | Celtic Mannville Sands Pool | 30 | 90 | 1 | 40 |
| 232122 | Celtic Sparky Sand Pool | 30 | 90 | 1 | 40 |
| 231313 | Celtic Waseca Sand Pool | 30 | 90 | 1 | 40 |
| 331073 | Chambery Upper Shaunvon Pool | 20 | 91 | 4 | 160 |
| 435021 | Clarilaw Frobisher-Alida Beds Pool | 35 | 75 | 2 | 80 |
| 435041 | Clarilaw West Frobisher-Alida Beds Pool | 35 | 75 | 1 | 40 |
| 330062 | Clintonville Shaunavon Pool | 25 | 90 | 4 | 160 |
| 441421 | Coleville Bakken Sand Pool | 15 | 93 | 1/2 | 20 |
| 230026 | Coleville Mannville Sand Pool | 25 | 90 | 1 | 40 |
| 441429 | Coleville South Bakken Sand Pool | 15 | 93 | 1 | 40 |
| 230027 | Coleville South Mannville Sand Pool | 25 | 90 | 1 | 40 |
| 234122 | Cosine Lake Lloydminster Sand Pool | 30 | 90 | 1 | 40 |
| 441431 | Court Bakken Sand Pool | 25 | 95 | 1 | 40 |
| 331055 | Covington Upper Shaunavon Pool | 15 | 94 | 2 | 80 |
| 331071 | Covington West Upper Shaunavon Pool | 25 | 75 | 4 | 160 |
| 438030 | Crystal Hill Souris Valley Beds Pool | 40 | 90 | 4 | 160 |
| 435028 | Dalesboro Frobisher-Alida Beds Pool | 35 | 78 | 2 | 80 |
| 232125 | Dee Valley East Sparky Sand Pool | 30 | 90 | 1 | 40 |
| 231316 | Dee Valley East Waseca Sand Pool | 30 | 90 | 1 | 40 |
| 231310 | Dee Valley Waseca Sand Pool | 30 | 90 | 1 | 40 |
| 331046 | Delta Upper Shaunavon Pool | 25 | 93 | 2 | 80 |
| 227327 | Dodsland Viking Sand Pool | 35 | 90 | 1 | 40 |
| 331041 | Dollard Upper Shaunavon Pool | 5 | 91 | 2 & 4 | 80 & 160 |
| 230025 | Druid Mannville Sands Pool | 30 | 90 | 1 | 40 |
| 232109 | Dulwich North Sparky Sand Pool | 30 | 90 | 1/2 | 20 |
| 232102 | Dulwich Sparky Sand Pool | 30 | 90 | 1/4 | 10 |
| 231324 | Ear Lake Waseca Sand Pool | 30 | 90 | 1 | 40 |
| 435189 | East Pinto Frobisher Beds Pool | 35 | 75 | 2 | 80 |

## MAXIMUM PERMISSIVE RATE FACTORS*

| HORIZON POOL CODE | POOL NAME | AVERAGE INTERSTITIAL WATER (SW) | AVERAGE SHRINKAGE FACTOR (1/Boi) | ASSIGNED AREA (LSDS) (A) | (ACRES) |
|---|---|---|---|---|---|
| 433033 | East Pinto Midale Beds Pool | 35 | 75 | 2 | 80 |
| 331056 | Eastbrook Upper Shaunavon Pool | 20 | 91 | 2 | 80 |
| 330074 | Eastend Shaunavon Pool | 20 | 91 | 2 & 4 | 80 & 160 |
| 231320 | Edam Waseca Sand Pool | 30 | 90 | 1 | 40 |
| 230904 | Edam West Mannville Sands Pool | 30 | 90 | 1/2 | 20 |
| 232141 | Edam West Sparky/G.P. Sand Pool | 30 | 90 | 1/2 | 20 |
| 231323 | Edam West Waseca Sand Pool | 30 | 90 | 1/2 | 20 |
| 437032 | Edenvale Tilston Beds Pool | 40 | 90 | 2 | 80 |
| 435184 | Elmore Frobisher Beds Pool | 45 | 86 | 2 | 80 |
| 433018 | Elmore Midale Beds Pool | 35 | 75 | 2 | 80 |
| 232504 | Epping G.P. Sand Pool | 30 | 90 | 1/2 & 1 | 20 & 40 |
| 232104 | Epping Sparky Sand Pool | 30 | 90 | 1/2 & 1 | 20 & 40 |
| 227323 | Eureka Viking Pool | 35 | 90 | 1 | 40 |
| 231208 | Evesham North McLaren Sand Pool | 30 | 90 | 1 | 40 |
| 232145 | Evesham North Sparky Sand Pool | 30 | 90 | 1 | 40 |
| 232142 | Evesham Sparky Sand Pool | 30 | 90 | 1 | 40 |
| 235002 | Eyehill Cummings Sand Pool | 30 | 90 | 1 | 40 |
| 437037 | Fertile Tilston Beds Pool | 40 | 90 | 1 | 40 |
| 437580 | Fertile Tilston-Souris Valley Beds Pool | 40 | 90 | 1 | 40 |
| 432085 | Flat Lake Ratcliffe Beds Pool | 35 | 80 | 4 | 160 |
| 435187 | Florence Frobisher Beds Pool | 35 | 75 | 2 | 80 |
| 230902 | Forest Bank Mannville Sands Pool | 30 | 90 | 1 | 40 |
| 232123 | Forest Bank Sparky Sand Pool | 30 | 90 | 1 | 40 |
| 231305 | Forest Bank Waseca Sand Pool | 30 | 90 | 1 | 40 |
| 227338 | Forgan Viking Sand Pool | 35 | 90 | 1 | 40 |
| 314541 | Fosterton Roseray Sand Pool | 16 | 95 | 1 | 40 |
| 238151 | Fosterton South Cantuar Sand Pool | 30 | 90 | 1 | 40 |
| 314554 | Fosterton South Roseray Sand Pool | 16 | 95 | 1 | 40 |
| 432090 | Freda Lake Ratcliffe Beds Pool | 35 | 90 | 2 | 80 |
| 232130 | Freemont Sparky Sand Pool | 30 | 90 | 1 | 40 |
| 231315 | Freemont Waseca Sand Pool | 30 | 90 | 1 | 40 |
| 435082 | Freestone Frobisher-Alida Beds Pool | 35 | 75 | 1 & 2 | 40 & 80 |
| 437581 | Frys East Tilston-Souris Valley Beds Pool | 40 | 90 | 1 | 40 |
| 437579 | Frys Tilston-Souris Valley Beds Pool | 40 | 90 | 1 | 40 |
| 232113 | Furness Sparky Sand Pool | 30 | 90 | 1/4 | 10 |
| 441425 | Fusilier Bakken Sand Pool | 25 | 95 | 1 | 40 |
| 435009 | Gainsborough Frobisher-Alida Beds Pool | 30 | 75 | 2 | 80 |
| 435181 | Glen Ewen Frobisher Beds Pool | 35 | 75 | 4 | 160 |

## MAXIMUM PERMISSIVE RATE FACTORS*

| HORIZON POOL CODE | POOL NAME | AVERAGE INTERSTITIAL WATER (SW) | AVERAGE SHRINKAGE FACTOR (1/Boi) | ASSIGNED AREA | |
|---|---|---|---|---|---|
| | | | | (LSDS) (A) | (ACRES) |
| 433008 | Glen Ewen Midale Beds Pool | 35 | 75 | 2 & 4 | 80 & 160 |
| 230906 | Golden Lake North Mannville Sands Pool | 30 | 90 | 1 | 40 |
| 232112 | Golden Lake North Sparky Sand Pool | 30 | 90 | 1 | 40 |
| 231306 | Golden Lake North Waseca Sand Pool | 30 | 90 | 1 | 40 |
| 232107 | Golden Lake South Sparky Sand Pool | 30 | 90 | 1 | 40 |
| 231308 | Golden Lake South Waseca Sand Pool | 30 | 90 | 1 | 40 |
| 435168 | Griffin Frobisher Beds Pool | 35 | 89 | 2 | 80 |
| 238142 | Gull Lake Basal Cantuar Sand Pool | 35 | 92 | 1 | 40 |
| 331058 | Gull Lake Central Upper Shaunavon Pool | 25 | 97 | 2 | 80 |
| 331043 | Gull Lake North Upper Shaunavon Pool | 25 | 97 | 1 | 40 |
| 331057 | Gull Lake South Upper Shaunavon Pool | 25 | 97 | 4 | 160 |
| 231307 | Gully Lake Waseca Sand Pool | 30 | 90 | 1 | 40 |
| 435761 | Handsworth Alida Beds Pool | 35 | 75 | 2 | 80 |
| 435087 | Hartaven Frobisher-Alida Beds Pool | 40 | 89 | 2 | 80 |
| 435190 | Hastings East Frobisher Beds Pool | 35 | 75 | 2 | 80 |
| 435177 | Hastings Frobisher Beds Pool | 35 | 75 | 1 & 2 | 40 & 80 |
| 437027 | Hazelwood Tilston Beds Pool | 40 | 90 | 2 | 80 |
| 314548 | Hazlet Roseray Sand Pool | 21 | 94.7 | 2 | 80 |
| 441430 | Hearts Hill Bakken Sand Pool | 25 | 95 | 1 | 40 |
| 432094 | Hoffer Ratcliffe Beds Pool | 35 | 80 | 2 & 4 | 80 & 160 |
| 441424 | Hoosier Bakken Sand Pool | 25 | 95 | 1 | 40 |
| 435167 | Hume Frobisher Beds Pool | 35 | 89 | 4 | 160 |
| 433091 | Hume Midale Beds Pool | 35 | 89 | 2 & 4 | 80 & 160 |
| 521029 | Hummingbird Birdbear Pool | 25 | 83 | 2 | 80 |
| 432088 | Hummingbird Ratcliffe Beds Pool | 25 | 75 | 2 | 80 |
| 435163 | Huntoon Frobisher Beds Pool | 50 | 89 | 2 & 4 | 80 & 160 |
| | (East Group) | 35 | 89 | 2 & 4 | 80 & 160 |
| 433079 | Huntoon Midale Beds Pool | 50 | 89 | 2 & 4 | 80 & 160 |
| 331054 | Illerbrun Upper Shaunavon Pool | 15 | 94 | 4 | 160 |
| 435003 | Ingoldsby Frobisher-Alida Beds Pool | 35 | 89 | 1 & 2 | 40 & 80 |
| 435042 | Ingoldsby West Frobisher-Alida Beds Pool | 35 | 75 | 1 | 40 |
| 435165 | Innes Frobisher Beds Pool | 35 | 89 | 2 | 80 |
| 331049 | Instow Upper Shaunavon Pool | 5 | 94 | 2 | 80 |
| 238150 | Java Cantuar Sand Pool | 30 | 90 | 2 | 80 |
| 331042 | Johnston Upper Shaunavon Pool | 25 | 97 | 1 | 40 |
| 437016 | Kenosee Tilston Beds Pool | 40 | 90 | 2 | 80 |
| 227342 | Kerrobert Viking Sand Pool | 35 | 90 | 1 | 40 |
| 521034 | Kisbey Birdbear Pool | 40 | 75 | 2 | 80 |

## MAXIMUM PERMISSIVE RATE FACTORS*

| HORIZON POOL CODE | POOL NAME | AVERAGE INTERSTITIAL WATER (SW) | AVERAGE SHRINKAGE FACTOR (1/Boi) | ASSIGNED AREA (LSDS) (A) | (ACRES) |
|---|---|---|---|---|---|
| 432086 | Lake Alma Ratcliffe Beds Pool | 35 | 80 | 2 | 80 |
| 231201 | Landrose McLaren Sand Pool | 30 | 90 | 1/2 & 1 | 20 & 40 |
| 231301 | Landrose Waseca Sand Pool | 30 | 90 | 1/2 & 1 | 20 & 40 |
| 232129 | Lashburn South Sparky Sand Pool | 30 | 90 | 1 | 40 |
| 231314 | Lashburn South Waseca Sand Pool | 30 | 90 | 1 | 40 |
| 231303 | Lashburn Waseca Sand Pool | 30 | 90 | 1 | 40 |
| 232137 | Lashburn West Sparky Sand Pool | 30 | 90 | 1 | 40 |
| 330047 | Leitchville Shaunavon Pool | 35 | 90 | 2 & 4 | 80 & 160 |
| 330048 | Leon Lake Shaunavon Pool | 25 | 90 | 4 | 160 |
| 437023 | Lightning Tilston Beds Pool | 40 | 90 | 2 | 80 |
| 232124 | Lloydminster Sparky Sand Pool | 30 | 90 | 1/2 | 20 |
| 232103 | Lone Rock Sparky Sand Pool | 30 | 90 | 1/4 | 10 |
| 435073 | Lost Horse Hill Frobisher-Alida Beds Pool | 45 | 89 | 1 & 2 | 40 & 80 |
| 433081 | Lougheed Midale Beds Pool | 35 | 89 | 2 | 80 |
| 240024 | Loverna Detrital Pool | 25 | 75 | 1 | 40 |
| 231302 | Low Lake Waseca Sand Pool | 30 | 90 | 1/2 | 20 |
| 227335 | Lucky Hills Viking Pool | 35 | 90 | 2 & 4 | 80 & 160 |
| 441432 | Luseland Bakken Sand Pool | 25 | 95 | 1 | 40 |
| 232126 | Macklin Sparky Sand Pool | 30 | 90 | 1 | 40 |
| 433095 | Macoun Midale Beds Pool | 35 | 89 | 4 | 160 |
| 433069 | Macoun West Midale Beds Pool | 40 | 89 | 4 | 160 |
| 231205 | Maidstone McLaren Sand Pool | 30 | 90 | 1 | 40 |
| 231322 | Maidstone Waseca Sand Pool | 30 | 90 | 1 | 40 |
| 314543 | Main Success Roseray Sand Pool | 30 | 93 | 1 | 40 |
| 232143 | Manito Lake Sparky Sand Pool | 30 | 90 | 1 | 40 |
| 232138 | Marsden South Sparky Sand Pool | 30 | 90 | 1 | 40 |
| 232105 | Marsden Sparky Sand Pool | 30 | 90 | 1/4 | 10 |
| 435080 | Melrose Frobisher-Alida Beds Pool | 45 | 89 | 2 | 80 |
| 435161 | Midale Central Frobisher Beds Pool | 50 | 89 | 2 | 80 |
| 433072 | Midale Central Midale Beds Pool | 50 | 89 | 2 | 80 |
| 433070 | Minard Midale Beds Pool | 35 | 89 | 4 | 160 |
| 437014 | Moose Mountain Tilston Beds Pool | 40 | 90 | 1 | 40 |
| 437076 | Moose Valley Tilston Beds Pool | 40 | 90 | 2 | 80 |
| 435031 | Morrisview Frobisher-Alida Beds Pool | 35 | 80 | 2 | 80 |
| 231203 | Neilburg McLaren Sand Pool | 30 | 90 | 1 | 40 |
| 432092 | Neptune Ratcliffe Beds Pool | 35 | 80 | 4 | 160 |
| 433026 | North Antler Midale Beds Pool | 35 | 75 | 2 | 80 |
| 435762 | North Handsworth Alida Beds Pool | 35 | 75 | 2 | 80 |

## MAXIMUM PERMISSIVE RATE FACTORS*

| HORIZON POOL CODE | POOL NAME | AVERAGE INTERSTITIAL WATER (SW) | AVERAGE SHRINKAGE FACTOR (1/Boi) | ASSIGNED AREA | |
|---|---|---|---|---|---|
| | | | | (LSDS) (A) | (ACRES) |
| 441423 | North Hoosier Bakken Sand Pool | 25 | 95 | 1 | 40 |
| 239021 | North Hoosier Basal Blairmore Sand Pool | 25 | 90 | 1/2 | 20 |
| 314542 | North Premier Roseray Sand Pool | 25 | 93 | 1 | 40 |
| 331044 | North Premier Upper Shaunavon Pool | 25 | 93 | 1 | 40 |
| 441433 | North Smiley Bakken Sand Pool | 25 | 93 | 1 | 40 |
| 435185 | Northgate Frobisher Beds Pool | 35 | 75 | 4 | 160 |
| 433020 | Northgate Midale Beds Pool | 35 | 75 | 2 | 80 |
| 232509 | Northminster North G.P. Sand Pool | 30 | 90 | 1 | 40 |
| 232134 | Northminster North Sparky Sand Pool | 30 | 90 | 1 | 40 |
| 232108 | Northminster Sparky Sand Pool | 30 | 90 | 1 | 40 |
| 435780 | Nottingham Alida Beds Pool (Non-Unit) | 35 | 75 | 2 | 80 |
| | (Unit) | 22 | 75 | 2 | 80 |
| 331074 | Notukeu Upper Shaunavon Pool | 25 | 75 | 4 | 160 |
| 435178 | Oakley Frobisher Beds Pool | 35 | 75 | 2 | 80 |
| 432083 | Oungre Ratcliffe Beds Pool | 35 | 80 | 2 | 80 |
| 439022 | Parkman Souris Valley Beds Pool | 50 | 90 | 2 | 80 |
| 437578 | Parkman South Tilston-Souris Valley Beds Pool | 40 | 90 | 2 | 80 |
| 437013 | Parkman Tilston Beds Pool | 40 | 90 | 1 | 40 |
| 437576 | Parkman Tilston-Souris Valley Beds (Tilston) | 40 | 90 | 1 & 2 | 40 & 80 |
| | (Souris Valley) | 50 | 90 | 1 & 2 | 40 & 80 |
| 331061 | Pennant Upper Shaunavon Pool | 25 | 95 | 2 | 80 |
| 232507 | Pikes Peak G.P. Sand Pool | 30 | 90 | 1 | 40 |
| 232128 | Pikes Peak Sparky Sand Pool | 30 | 90 | 1 | 40 |
| 231312 | Pikes Peak Waseca Sand Pool | 30 | 90 | 1 | 40 |
| 435182 | Pinto Frobisher Beds Pool | 35 | 75 | 2 | 80 |
| 433015 | Pinto Midale Beds Pool | 35 | 75 | 2 | 80 |
| 227340 | Plato North Viking Pool | 35 | 90 | 1 | 40 |
| 227333 | Plato Viking Pool | 35 | 90 | 2 | 80 |
| 441427 | Plover Lake Bakken Sand Pool | 25 | 95 | 1 | 40 |
| 227343 | Prairiedale Viking Sand Pool | 35 | 90 | 1 | 40 |
| 435010 | Queensdale East Frobisher-Alida Beds Pool | 35 | 85 | 1 & 2 | 40 & 80 |
| 435782 | Queensdale North Alida Beds Pool | 35 | 75 | 2 | 80 |
| 435781 | Queensdale West Alida Beds Pool | 35 | 75 | 2 | 80 |
| 433097 | Ralph Midale Beds Pool | 35 | 89 | 2 | 80 |
| 331045 | Rapdan Upper Shaunavon Pool | 20 | 91 | 2 & 4 | 80 & 160 |
| 330063 | Rapdan West Shaunavon Pool | 20 | 91 | 4 | 160 |
| 354902 | Red Jacket Gravelbourg Pool | 38 | 98 | 2 | 80 |
| 336501 | Red Jacket Shaunavon-Gravelbourg Pool | 38 | 98 | 1 | 40 |

## MAXIMUM PERMISSIVE RATE FACTORS*

| HORIZON POOL CODE | POOL NAME | AVERAGE INTERSTITIAL WATER (SW) | AVERAGE SHRINKAGE FACTOR (1/Boi) | ASSIGNED AREA | |
|---|---|---|---|---|---|
| | | | | (LSDS) (A) | (ACRES) |
| 441476 | Rocanville Bakken Sand Pool | 35 | 75 | 2 | 80 |
| 441477 | Roncott Bakken Sand Pool | 25 | 94 | 2 | 80 |
| 435779 | Rosebank Alida Beds Pool | 35 | 79 | 2 | 80 |
| 435778 | Rosebank South Alida Beds Pool | 35 | 79 | 2 | 80 |
| 230905 | Rush Lake Mannville Sands Pool | 30 | 90 | 1 | 40 |
| 232140 | Rush Lake Sparky Sand Pool | 30 | 90 | 1 | 40 |
| 231321 | Rush Lake Waseca Sand Pool | 30 | 90 | 1 | 40 |
| 234142 | Salt Lake Lloydminster Sand Pool | 30 | 90 | 1 | 40 |
| 234139 | Senlac Lloydminster Sand Pool | 30 | 90 | 1 | 40 |
| 435164 | Sherwood Frobisher Beds Pool | 35 | 86 | 1 & 2 | 40 & 80 |
| 232101 | Silverdale Sparky Sand Pool | 30 | 90 | 1/4 | 10 |
| 435179 | Silverton Frobisher Beds Pool | 35 | 75 | 2 | 80 |
| 432096 | Skinner Lake Ratcliffe Beds Pool | 35 | 80 | 4 | 160 |
| 227023 | Smiley-Dewar Viking Pool | 35 | 90 | 1 | 40 |
| 435186 | Souris Flat Frobisher Beds Pool | 35 | 75 | 2 | 80 |
| 437002 | South Fletwode Tilston Beds Pool | 40 | 90 | 1 | 40 |
| 314545 | South Success Roseray Sand Pool | 30 | 93 | 1 | 40 |
| 231311 | Standard Hill Waseca Sand Pool | 30 | 90 | 1 | 40 |
| 435001 | Star Valley Frobisher-Alida Beds Pool | 35 | 81 | 1 & 2 | 40 & 80 |
| 435176 | Steelman Frobisher Beds Pool | 35 | 75 | 2 | 80 |
| 433004 | Steelman Midale Beds Pool | 35 | 72 | 2 | 80 |
| 436276 | Storthoaks Alida-Tilston Beds Pool (Alida) | 35 | 79 | 2 | 80 |
| | (Tilston) | 40 | 90 | 2 | 80 |
| 435078 | Stoughton Frobisher-Alida Beds Pool | 35 | 86 | 2 | 80 |
| 435171 | Stoughton South Frobisher Beds Pool | 35 | 86 | 2 | 80 |
| 314551 | Success North Roseray Sand Pool | 30 | 93 | 1 | 40 |
| 314544 | Success Roseray Sand Alpha Pool | 30 | 93 | 1 | 40 |
| 314549 | Suffield Roseray Sand Pool | 35 | 95 | 1 & 2 | 40 & 80 |
| 331052 | Suffield Upper Shaunavon Pool | 25 | 97 | 2 | 80 |
| 231204 | Tangleflags East McLaren Sand Pool | 30 | 90 | 1 | 40 |
| 232505 | Tangleflags G.P. Sand Pool | 30 | 90 | 1 | 40 |
| 234121 | Tangleflags Lloydminster Sand Pool | 30 | 90 | 1 | 40 |
| 230901 | Tangleflags Mannville Sands Pool | 30 | 90 | 1 | 40 |
| 231207 | Tangleflags McLaren Sand Pool | 30 | 90 | 1 | 40 |
| 235004 | Tangleflags North Cummings Sand Pool | 30 | 90 | 1 | 40 |
| 232506 | Tangleflags North G.P. Sand Pool | 30 | 90 | 1 | 40 |
| 234127 | Tangleflags North Lloydminster Sand Pool | 30 | 90 | 1 | 40 |
| 232114 | Tangleflags Sparky Sand Pool | 30 | 90 | 1 | 40 |

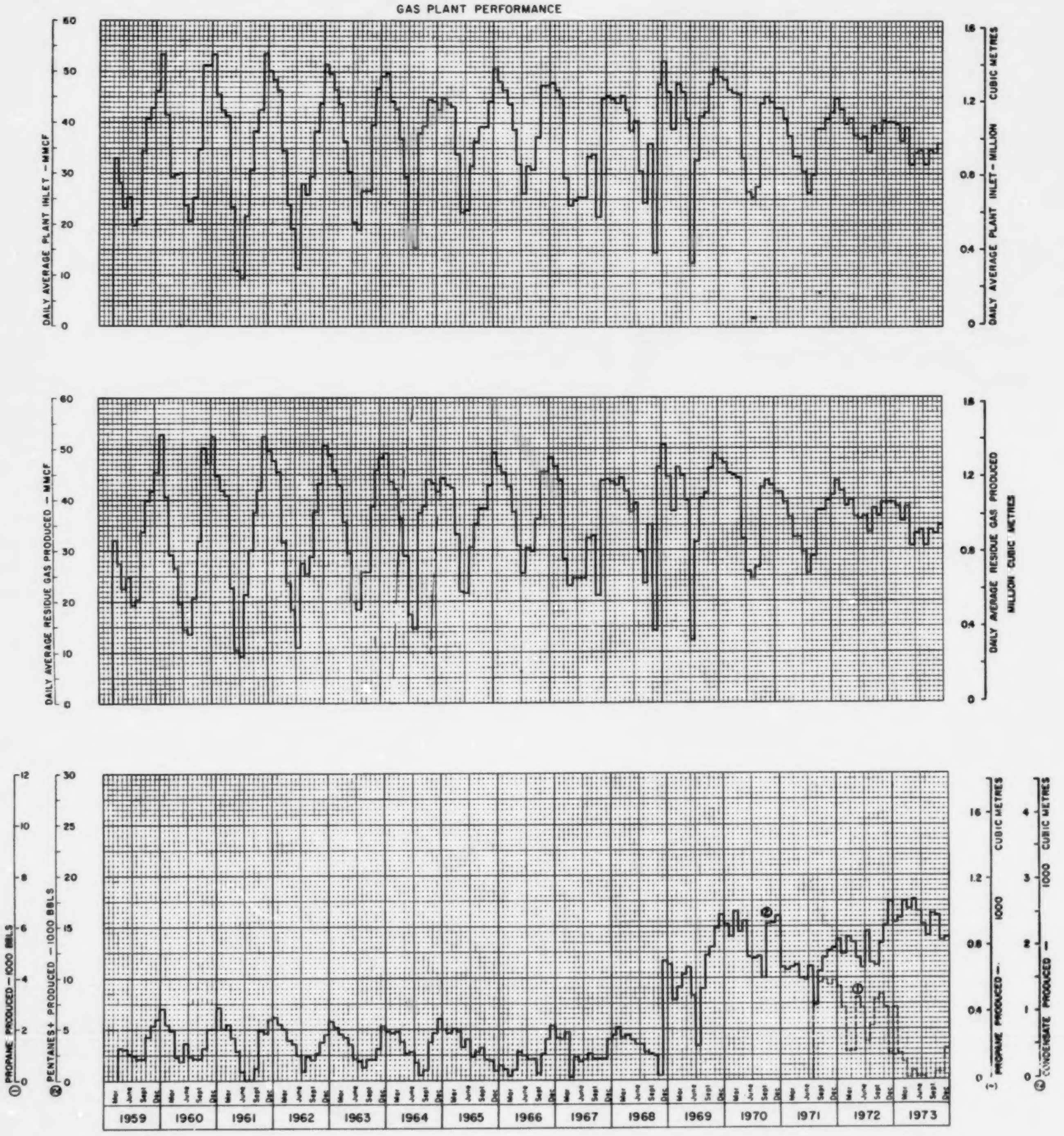
## MAXIMUM PERMISSIVE RATE FACTORS*

| HORIZON POOL CODE | POOL NAME | AVERAGE INTERSTITIAL WATER (SW) | AVERAGE SHRINKAGE FACTOR (1/Boi) | ASSIGNED AREA (LSDS) (A) | (ACRES) |
|---|---|---|---|---|---|
| 232508 | Tangleflags West G.P. Sand Pool | 30 | 90 | 1 | 40 |
| 234132 | Tangleflags West Lloydminster Sand Pool | 30 | 90 | 1 | 40 |
| 232131 | Tangleflags West Sparky Sand Pool | 30 | 90 | 1 | 40 |
| 433098 | Tatagwa Midale Beds Pool | 35 | 92 | 2 | 80 |
| 314547 | Verlo Roseray Sand Pool | 21 | 90 | 2 | 80 |
| 435170 | Viewfield Frobisher Beds Pool | 35 | 86 | 1 | 40 |
| 433071 | Viewhill Midale Beds Pool | 50 | 89 | 2 | 80 |
| 238661 | Wapella Sand Pool | 25 | 99 | 1 | 40 |
| 435784 | Warmley Alida Beds Pool | 35 | 90 | 2 | 80 |
| 436277 | Wauchope Alida Tilston Beds Pool | 35 | 75 | 1 | 40 |
| 435169 | Weir Hill Frobisher Beds Pool | 35 | 75 | 2 | 80 |
| 435166 | West Innes Frobisher Beds Pool | 35 | 89 | 2 | 80 |
| 433077 | West Kingsford Midale Beds Pool | 35 | 83.6 | 2 | 80 |
| 232510 | Westhazel G.P. Sand Pool | 30 | 90 | 1 | 40 |
| 232136 | Westhazel Sparky Sand Pool | 30 | 90 | 1 | 40 |
| 435162 | Weyburn Frobisher Beds Pool | 35 | 89 | 2 | 80 |
| 433074 | Weyburn Midale Beds Pool | 35 | 89 | 2 | 80 |
|  | (Northern Portion of Pool) | 50 | 89 | 2 | 80 |
| 435160 | Weyburn North Frobisher Beds Pool | 50 | 89 | 2 | 80 |
| 433068 | Weyburn North Midale Beds Pool | 50 | 89 | 2 | 80 |
| 437012 | White Bear Tilston Beds Pool | 40 | 90 | 1 | 40 |
| 437577 | White Bear Tilston-Souris Valley Beds (Tilston) | 40 | 90 | 2 | 80 |
|  | (Souris Valley) | 50 | 90 | 2 | 80 |
| 330075 | Whitemud Shaunavon Pool | 20 | 91 | 4 | 160 |
| 227326 | Whiteside Viking Sand Pool | 40 | 91 | 1 | 40 |
| 435783 | Wildwood Alida Beds Pool | 35 | 75 | 2 | 80 |
| 435011 | Willmar Frobisher-Alida Beds Pool | 25 | 78 | 1 & 2 | 40 & 80 |
| 435188 | Winmore Frobisher Beds Pool | 45 | 85 | 2 | 80 |
| 235007 | Winter Cummings Sand Pool | 30 | 90 | 1 | 40 |
| 435183 | Workman Frobisher Beds Pool | 35 | 84 | 2 | 80 |
| 433017 | Workman Midale Beds Pool | 35 | 79 | 2 | 80 |

* Factors in effect on June 1, 1987

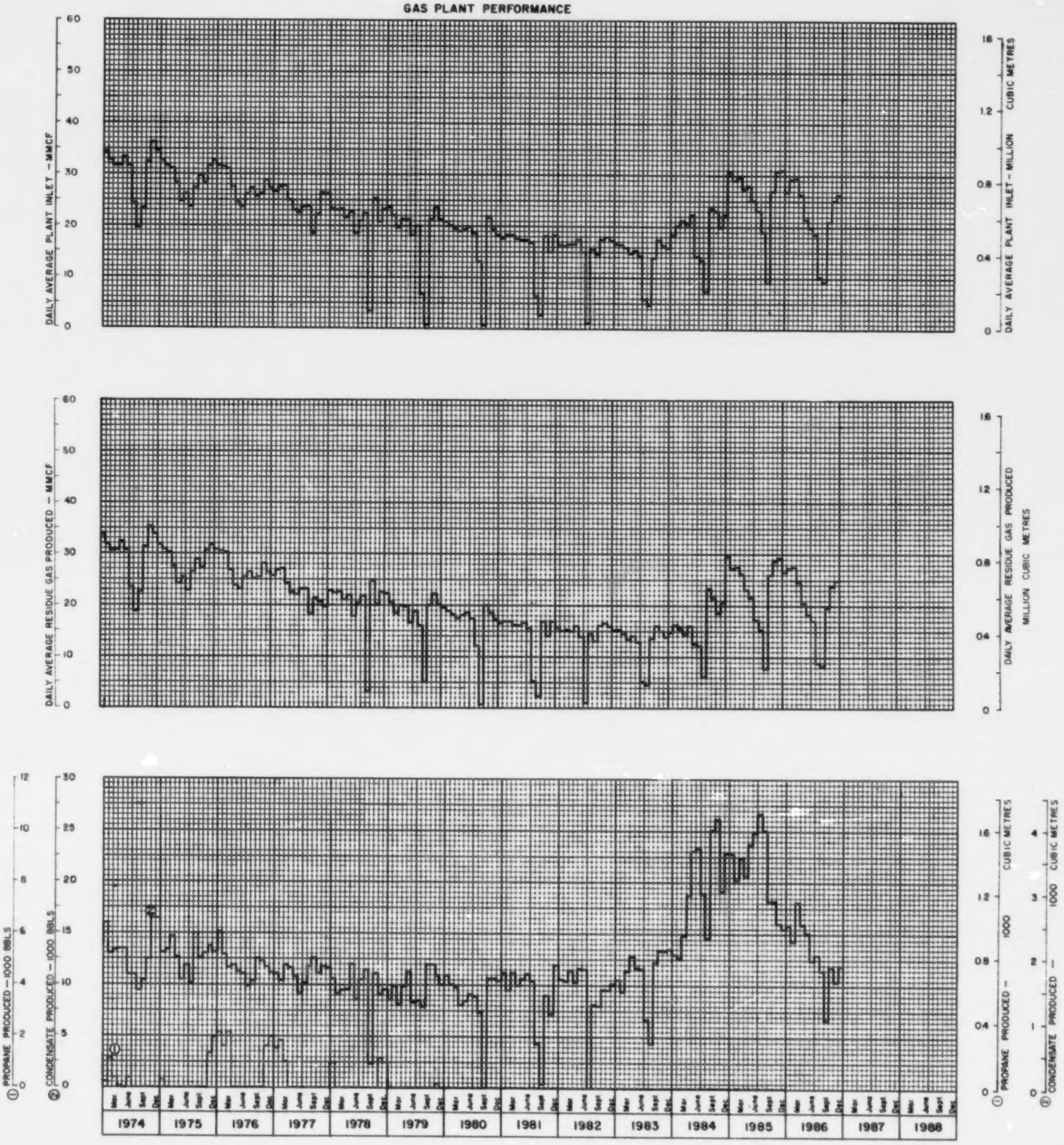
# GAS PLANT PERFORMANCE GRAPHS

# COLEVILLE GAS PLANT

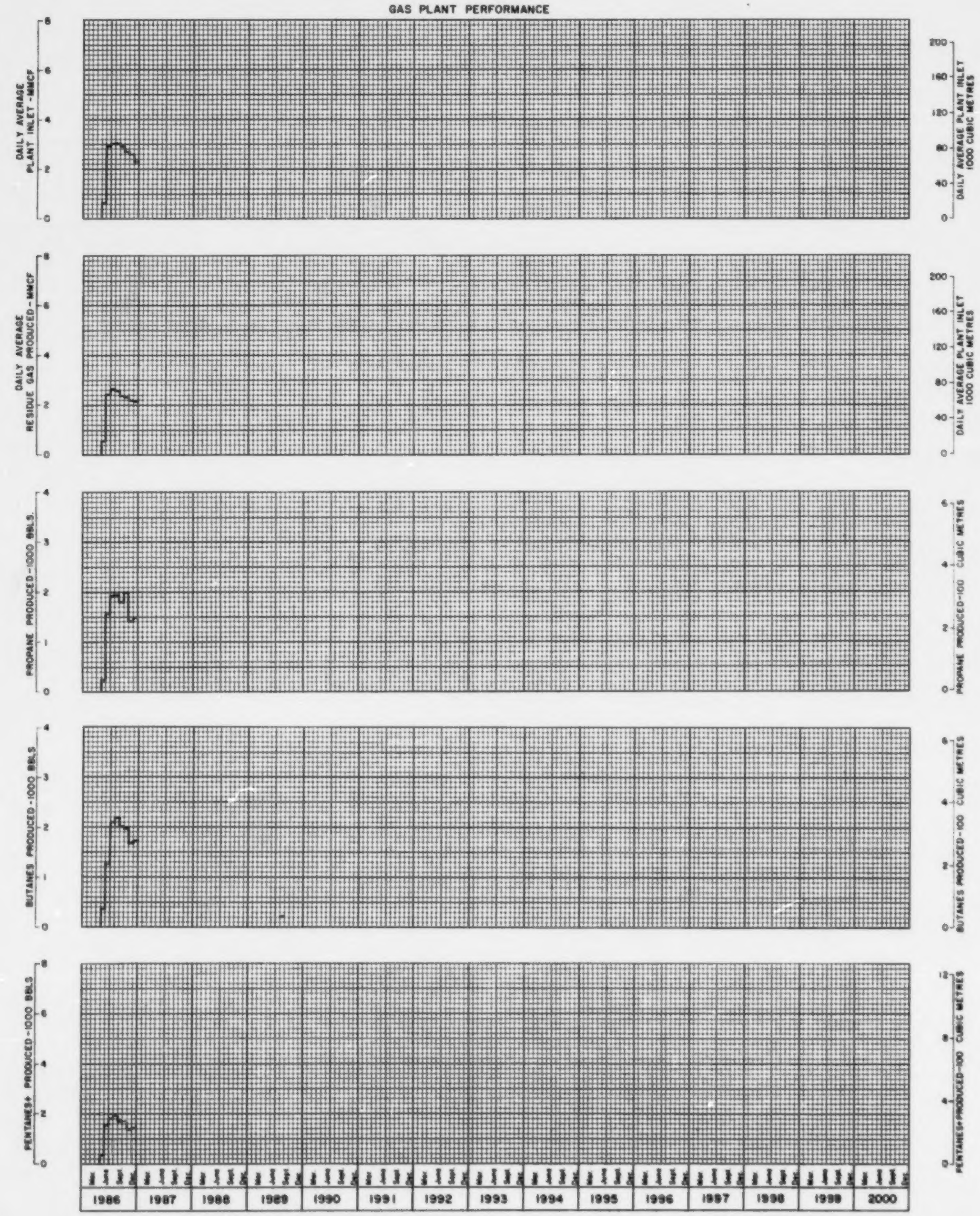


# COLEVILLE GAS PLANT

## GAS PLANT PERFORMANCE

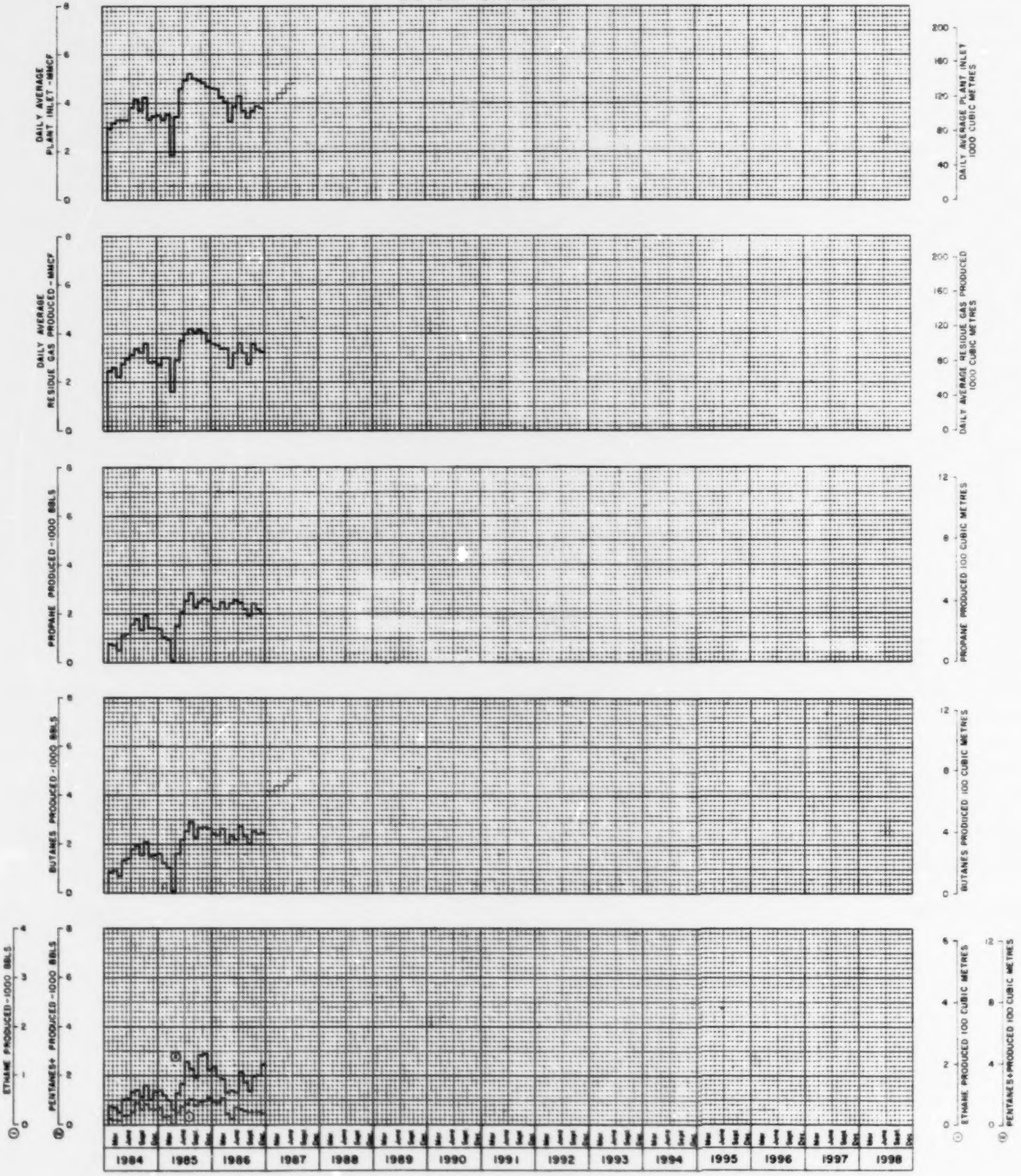


# COLEVILLE (WESTAR) GAS PLANT

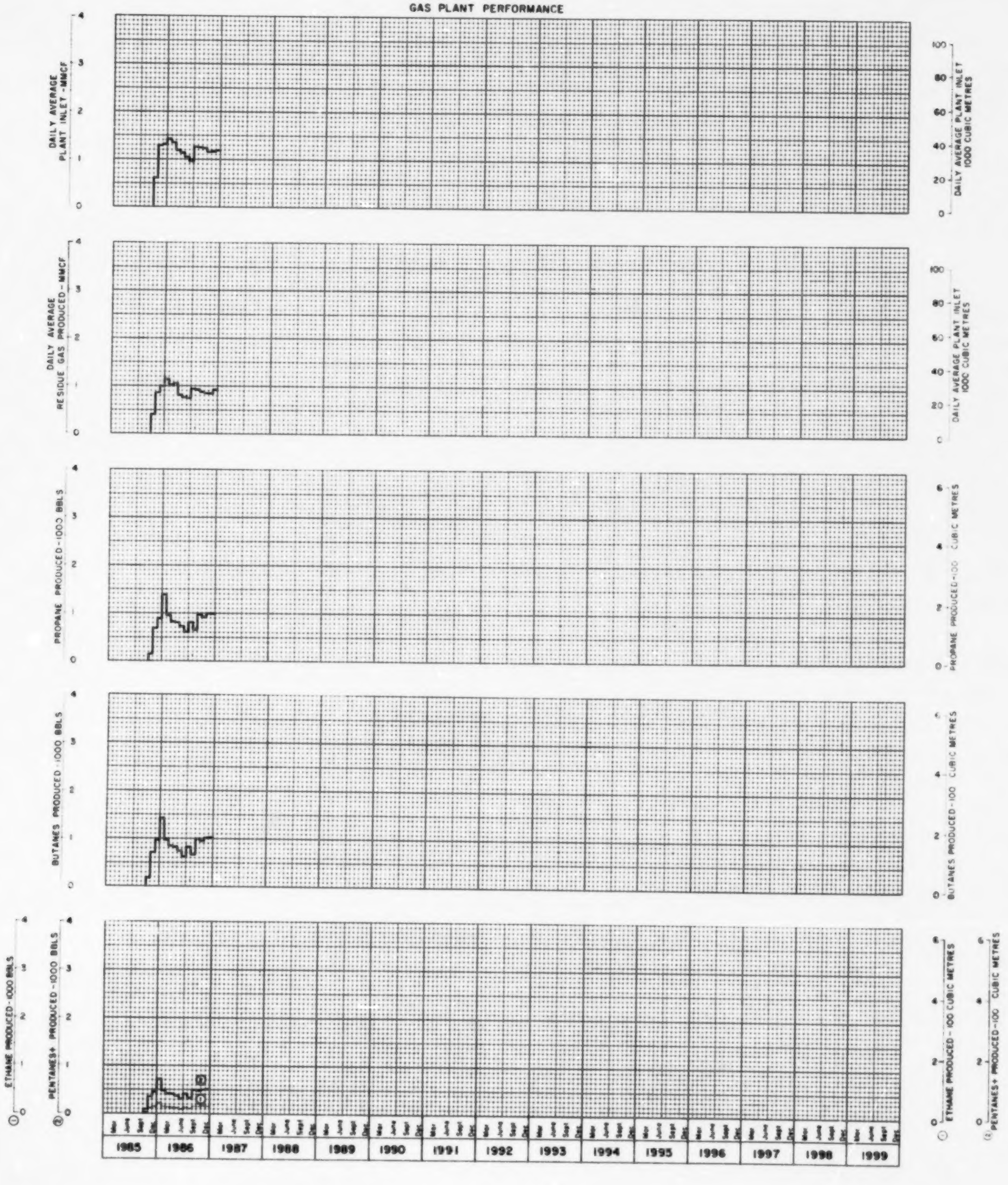


# DODSLAND GAS PLANT

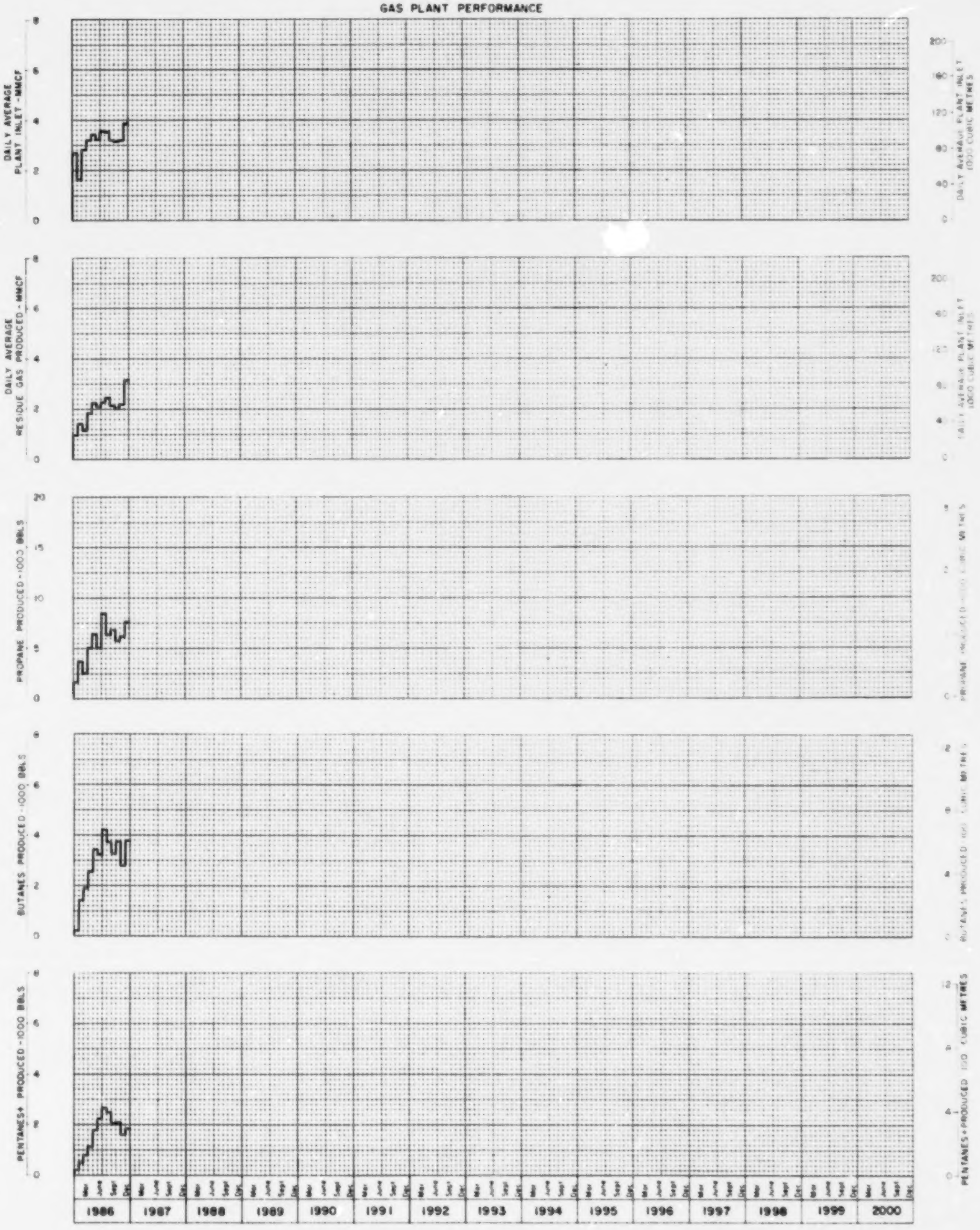
GAS PLANT PERFORMANCE



# KERROBERT GAS PLANT



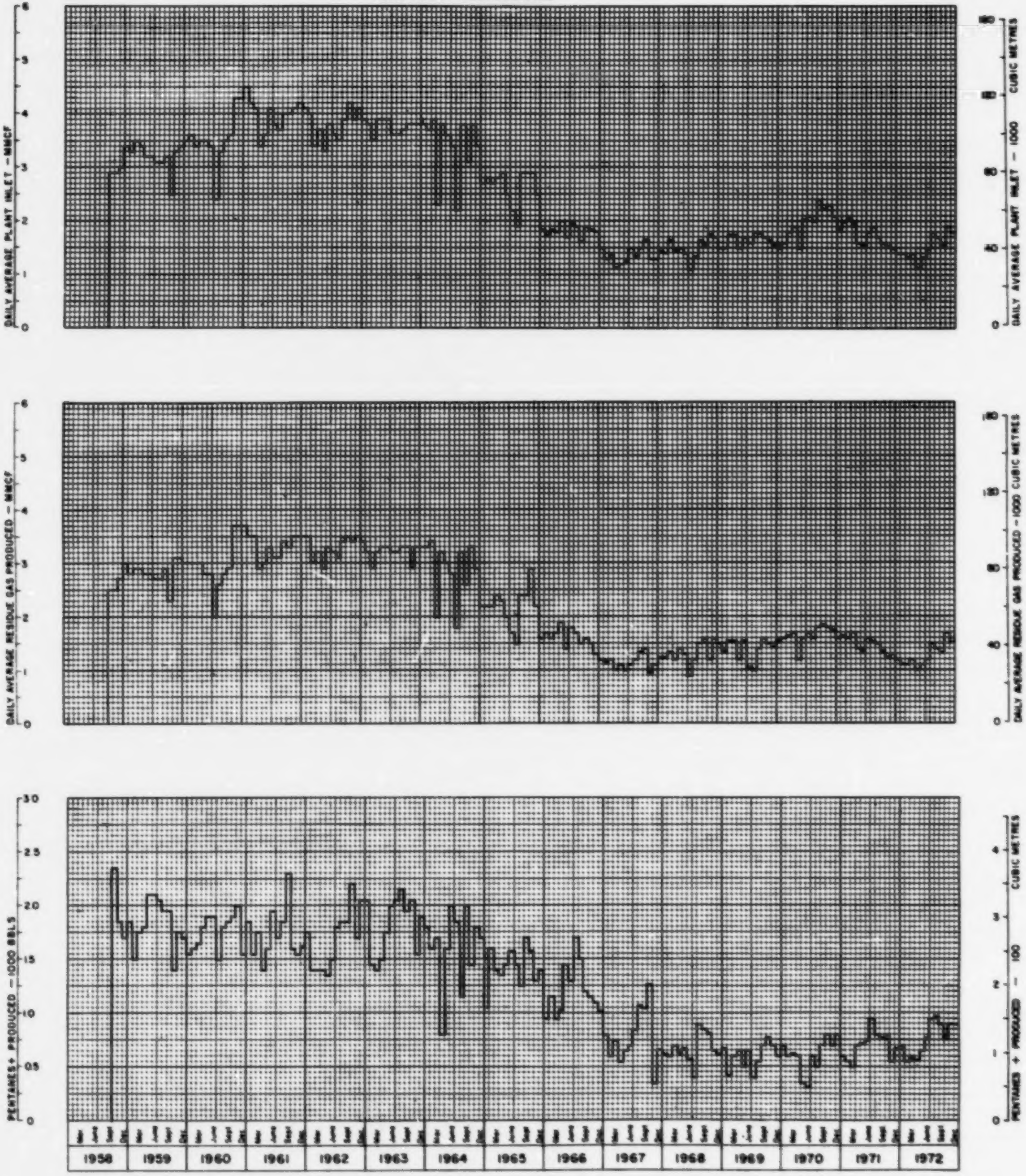
# NOTTINGHAM GAS PLANT



# SMILEY GAS CONSERVATION PLANT

## SMILEY-DEWAR VIKING SAND

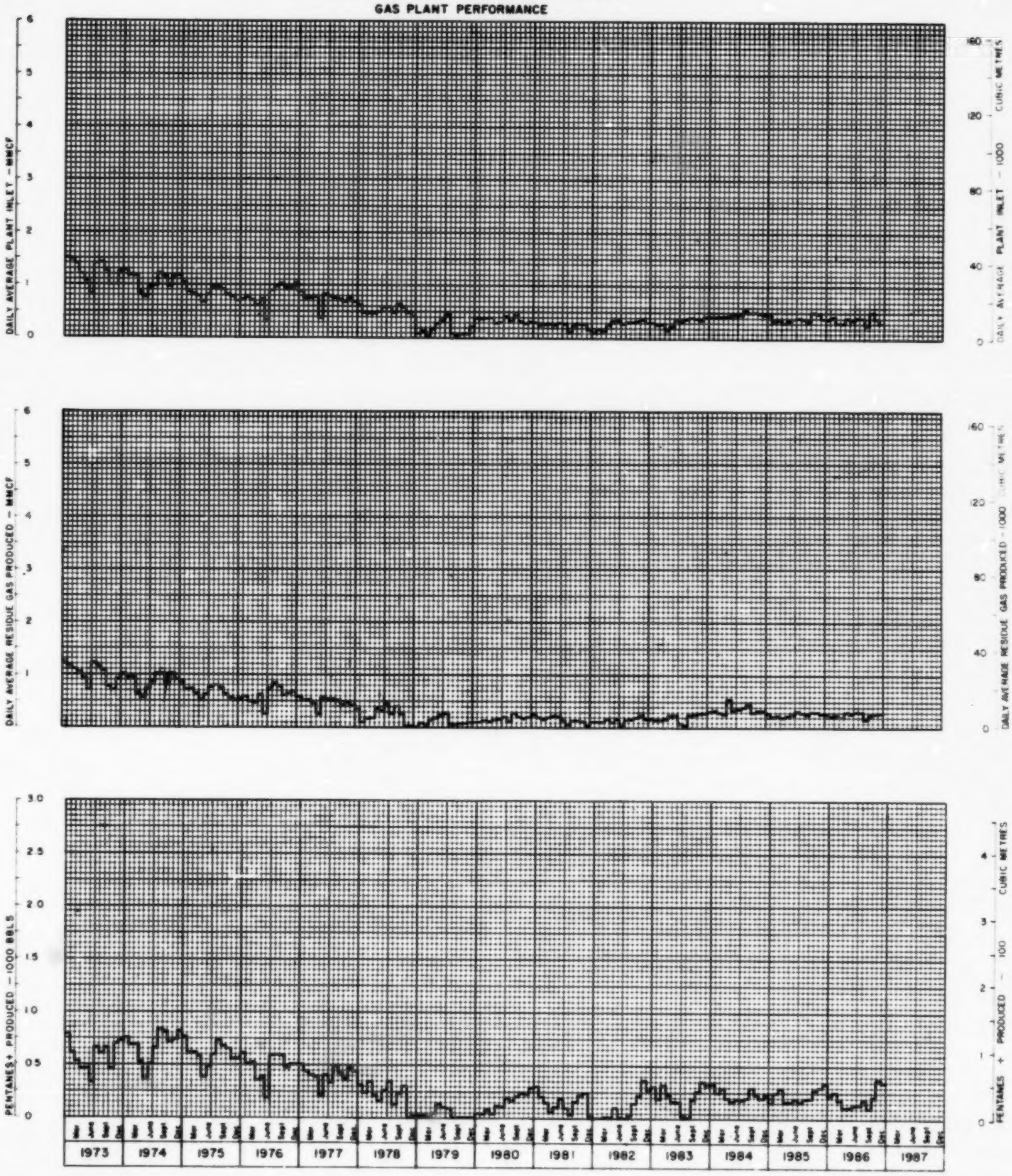
GAS PLANT PERFORMANCE



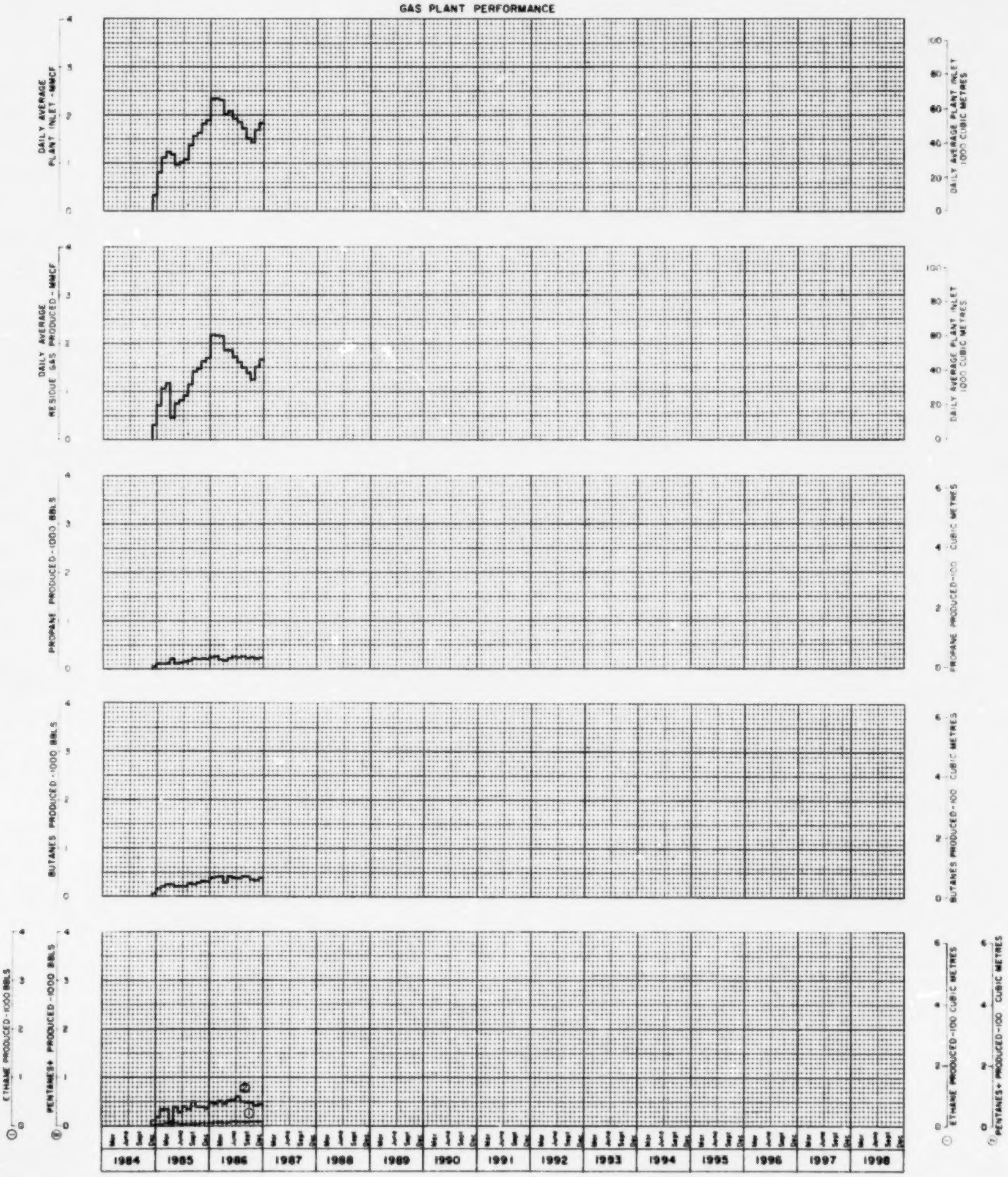
# SMILEY GAS CONSERVATION PLANT

## SMILEY-DEWAR VIKING SAND

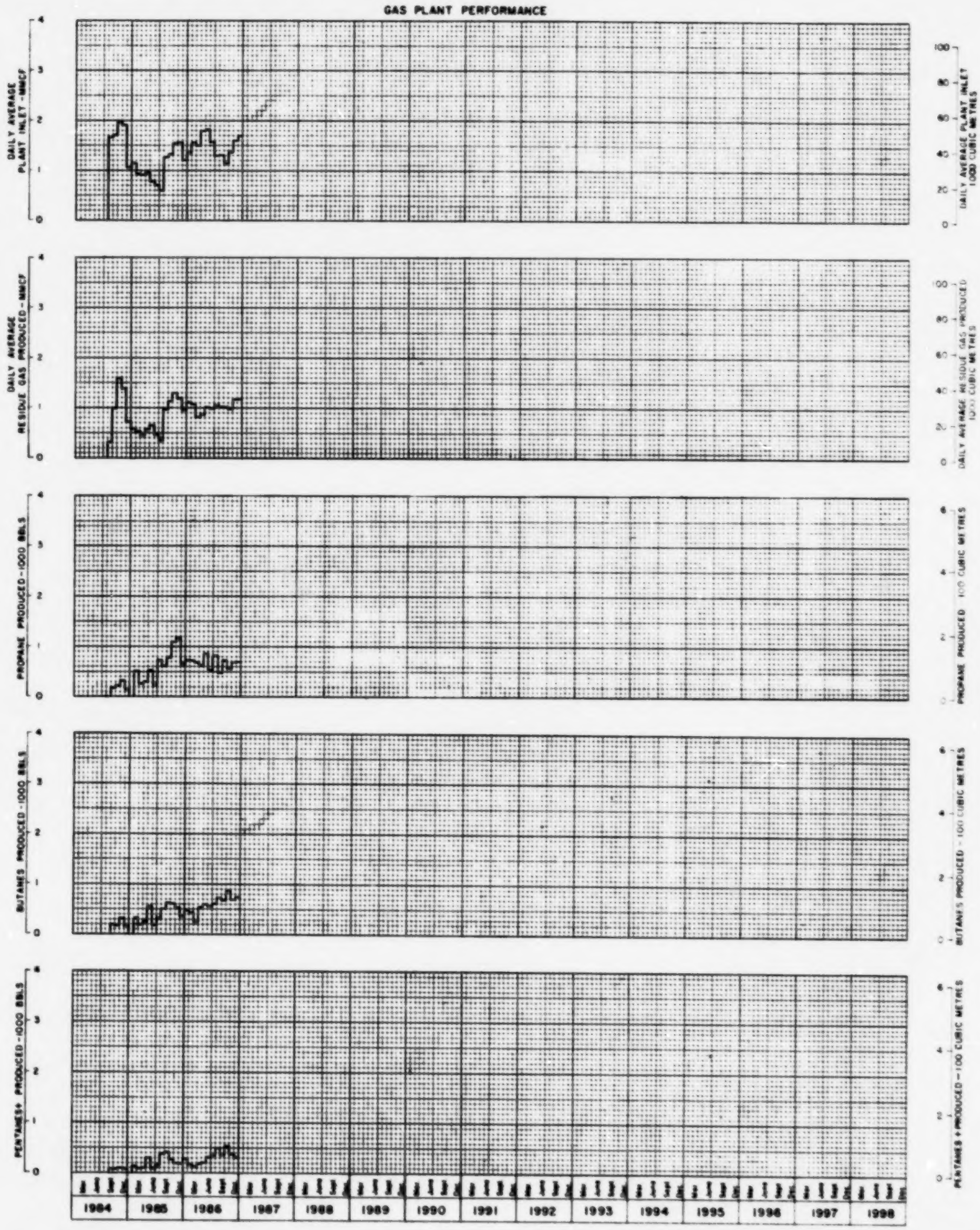
### GAS PLANT PERFORMANCE



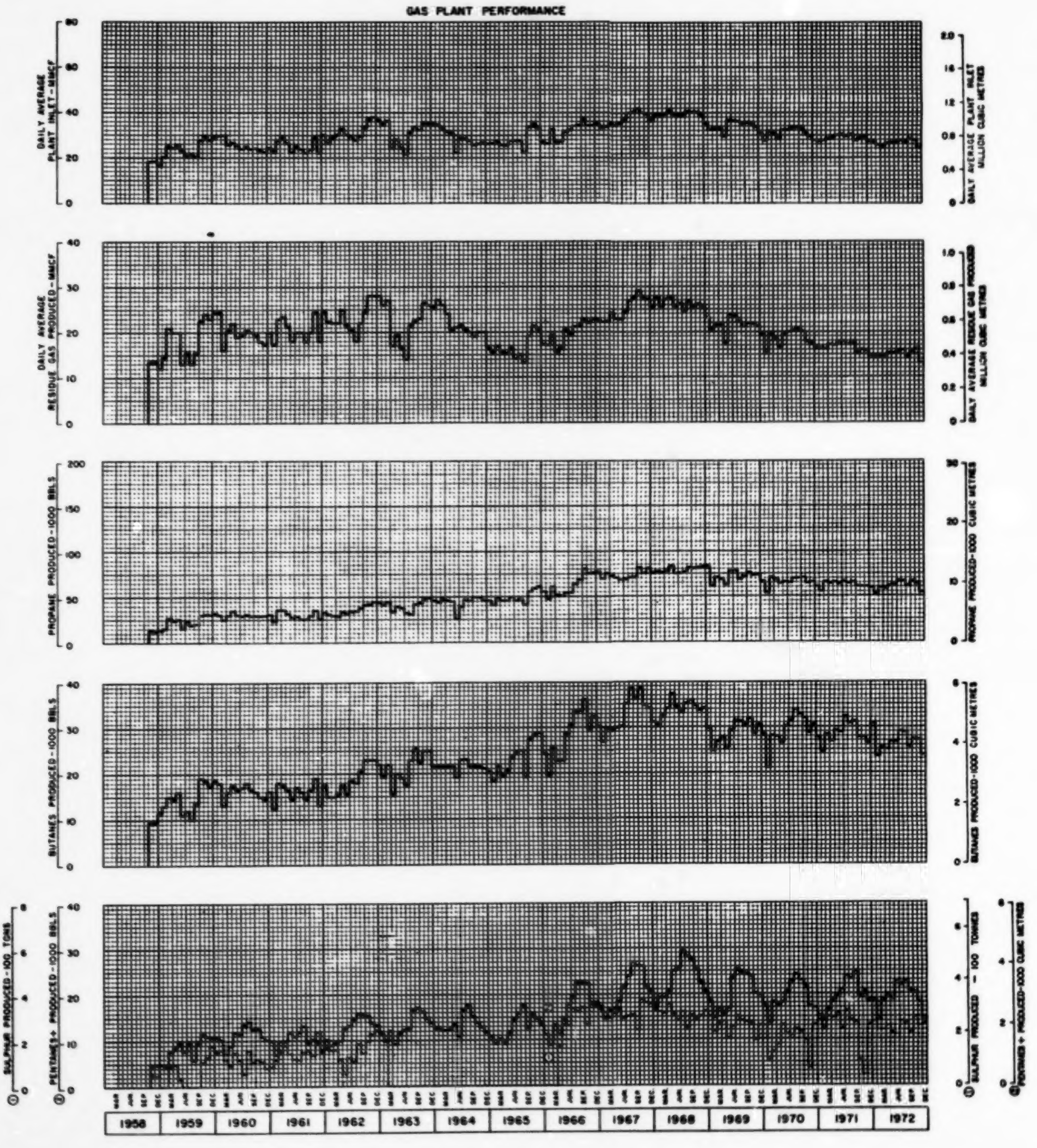
# SOUTH SMILEY GAS PLANT



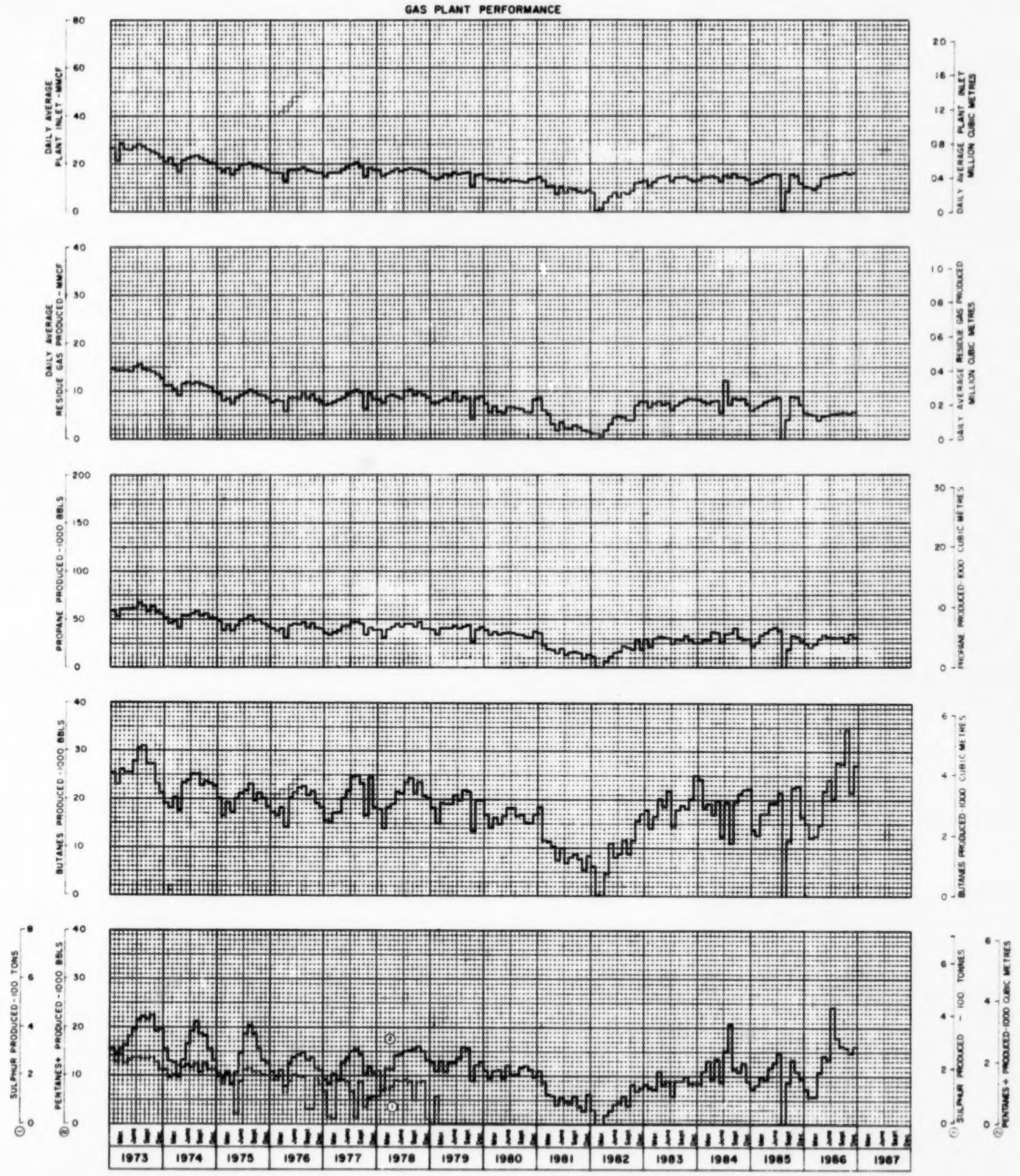
# STEELMAN NORTH GAS PLANT



# STEELMAN GAS PLANT



# STEELMAN GAS PLANT



# FORMATION WATER RESISTIVITY

## RESISTIVITY OF FORMATION WATERS @ 20°C

| AREA TWP | AREA RGE | AREA MER | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| 1 | 30 | W1 | FROBISHER | 1 | 0.059 | 0.059 |
| 2 | 30 | W1 | MANNVILLE | 1 | 1.000 | 1.000 |
| | | | FROBISHER | 1 | 0.057 | 0.057 |
| | | | FROBISHER-ALIDA | 11 | 0.047 - 0.060 | 0.054 |
| 3 | 30 | W1 | FROBISHER-ALIDA | 3 | 0.044 - 0.064 | 0.054 |
| | | | ALIDA | 8 | 0.044 - 0.066 | 0.057 |
| | | | TILSTON | 1 | 0.063 | 0.063 |
| | | | SOURIS VALLEY | 2 | 0.055 - 0.066 | 0.061 |
| | | | BIRDBEAR | 1 | 0.057 | 0.057 |
| 4 | 30 | W1 | TILSTON | 1 | 0.078 | 0.078 |
| 5 | 30 | W1 | TILSTON | 1 | 0.170 | 0.170 |
| 6 | 30 | W1 | TILSTON | 2 | 0.115 - 0.120 | 0.118 |
| | | | SOURIS VALLEY | 2 | 0.160 | 0.160 |
| 7 | 30 | W1 | SOURIS VALLEY | 1 | 0.210 | 0.210 |
| 9 | 30 | W1 | SOURIS VALLEY | 2 | 0.160 - 0.182 | 0.171 |
| 10 | 30 | W1 | MANNVILLE | 1 | 0.302 | 0.302 |
| | | | SOURIS VALLEY | 1 | 0.228 | 0.228 |
| 16 | 30 | W1 | BAKKEN | 1 | 0.184 | 0.184 |
| 17 | 30 | W1 | INTERLAKE | 2 | 0.033 - 0.035 | 0.034 |
| | | | STONY MOUNTAIN-RED RIVER | 1 | 0.045 | 0.045 |
| | | | WINNIPEG | 4 | 0.037 - 0.070 | 0.047 |
| 20 | 30 | W1 | BAKKEN | 1 | 0.680 | 0.680 |
| 26 | 30 | W1 | DUPEROW | 1 | 0.300 | 0.300 |
| 1 | 31 | W1 | MANNVILLE | 4 | 0.957 - 1.070 | 1.019 |
| | | | MIDALE | 6 | 0.063 - 0.078 | 0.074 |
| | | | FROBISHER | 9 | 0.041 - 0.056 | 0.048 |
| 2 | 31 | W1 | FROBISHER | 5 | 0.050 - 0.075 | 0.064 |
| | | | FROBISHER-ALIDA | 2 | 0.052 - 0.066 | 0.059 |
| | | | ALIDA | 1 | 0.060 | 0.060 |
| 3 | 31 | W1 | FROBISHER | 4 | 0.043 - 0.059 | 0.051 |
| | | | FROBISHER-ALIDA | 8 | 0.049 - 0.076 | 0.061 |
| 4 | 31 | W1 | FROBISHER-ALIDA | 14 | 0.042 - 0.069 | 0.050 |
| | | | ALIDA | 18 | 0.053 - 0.078 | 0.066 |
| | | | TILSTON | 3 | 0.046 - 0.070 | 0.060 |
| 5 | 31 | W1 | FROBISHER-ALIDA | 2 | 0.060 - 0.066 | 0.063 |
| | | | ALIDA-TILSTON | 2 | 0.048 - 0.059 | 0.054 |
| | | | TILSTON | 3 | 0.055 - 0.070 | 0.064 |
| 6 | 31 | W1 | TILSTON | 2 | 0.095 - 0.097 | 0.096 |
| 7 | 31 | W1 | SOURIS VALLEY | 3 | 0.110 - 0.120 | 0.113 |
| 9 | 31 | W1 | SOURIS VALLEY | 1 | 0.152 | 0.152 |
| 12 | 31 | W1 | VIKING | 1 | 0.400 | 0.400 |
| | | | GRAVELBOURG | 1 | 0.800 | 0.800 |
| | | | SOURIS VALLEY | 1 | 0.300 | 0.300 |
| | | | BIRDBEAR | 1 | 0.090 | 0.090 |
| 14 | 31 | W1 | SOURIS VALLEY | 1 | 0.228 | 0.228 |
| 15 | 31 | W1 | MANNVILLE | 2 | 0.600 - 0.620 | 0.610 |
| | | | GRAVELBOURG | 1 | 0.340 | 0.340 |
| | | | SOURIS VALLEY | 1 | 0.058 | 0.058 |
| 16 | 31 | W1 | BAKKEN | 7 | 0.200 - 0.235 | 0.220 |
| 17 | 31 | W1 | BAKKEN | 1 | 0.182 | 0.182 |
| 24 | 31 | W1 | SOURIS VALLEY | 1 | 0.104 | 0.104 |
| 25 | 31 | W1 | WINNIPEG | 1 | 0.047 | 0.047 |
| 1 | 32 | W1 | MIDALE | 5 | 0.068 - 0.076 | 0.072 |
| | | | FROBISHER | 10 | 0.044 - 0.060 | 0.051 |
| 2 | 32 | W1 | MANNVILLE | 3 | 0.950 - 0.970 | 0.958 |
| | | | MIDALE | 1 | 0.070 | 0.070 |
| | | | FROBISHER | 2 | 0.040 - 0.049 | 0.045 |
| | | | FROBISHER-ALIDA | 1 | 0.040 | 0.040 |
| 3 | 32 | W1 | FROBISHER | 2 | 0.044 - 0.047 | 0.046 |
| | | | BIRDBEAR | 1 | 0.070 | 0.070 |
| | | | DUPEROW | 2 | 0.061 - 0.064 | 0.063 |
| | | | SOURIS RIVER | 1 | 0.058 | 0.058 |
| | | | SILURIAN | 2 | 0.066 | 0.066 |
| | | | WINNIPEG | 1 | 0.060 | 0.060 |
| 4 | 32 | W1 | MANNVILLE | 2 | 0.870 - 0.890 | 0.880 |
| | | | JURASSIC | 1 | 0.320 | 0.320 |
| | | | GRAVELBOURG | 1 | 0.200 | 0.200 |
| | | | FROBISHER | 1 | 0.047 | 0.047 |
| | | | FROBISHER-ALIDA | 2 | 0.047 - 0.048 | 0.048 |
| | | | ALIDA | 9 | 0.047 - 0.070 | 0.058 |
| | | | SOURIS VALLEY | 1 | 0.055 | 0.055 |
| 5 | 32 | W1 | FROBISHER-ALIDA | 5 | 0.057 - 0.070 | 0.064 |
| | | | ALIDA | 12 | 0.047 - 0.067 | 0.058 |
| | | | TILSTON | 2 | 0.056 - 0.057 | 0.057 |
| 6 | 32 | W1 | TILSTON | 5 | 0.052 - 0.077 | 0.060 |
| | | | BIRDBEAR | 1 | 0.060 | 0.060 |
| | | | SOURIS RIVER | 1 | 0.060 | 0.060 |
| | | | WINNIPEGOSIS | 1 | 0.060 | 0.060 |
| | | | INTERLAKE | 2 | 0.060 | 0.060 |
| 7 | 32 | W1 | TILSTON | 7 | 0.047 - 0.092 | 0.075 |
| | | | TILSTON-SOURIS VALLEY | 1 | 0.076 | 0.076 |
| 8 | 32 | W1 | TILSTON | 1 | 0.094 | 0.094 |
| | | | SOURIS VALLEY | 2 | 0.100 - 0.102 | 0.101 |
| | | | INTERLAKE | 2 | 0.046 - 0.047 | 0.047 |
| 9 | 32 | W1 | SOURIS VALLEY | 3 | 0.131 - 0.180 | 0.160 |
| 16 | 32 | W1 | BAKKEN | 1 | 0.260 | 0.260 |
| 17 | 32 | W1 | BAKKEN | 3 | 0.187 - 0.310 | 0.246 |
| | | | WINNIPEGOSIS | 1 | 0.053 | 0.053 |
| | | | INTERLAKE | 1 | 0.052 | 0.052 |
| | | | WINNIPEG | 1 | 0.052 | 0.052 |
| 29 | 32 | W1 | SOURIS RIVER | 1 | 0.150 | 0.150 |
| | | | SOURIS RIVER-DAWSON BAY | 1 | 0.093 | 0.093 |
| | | | DAWSON BAY | 2 | 0.078 - 0.094 | 0.086 |
| 1 | 33 | W1 | MIDALE | 2 | 0.077 - 0.078 | 0.078 |
| | | | FROBISHER | 6 | 0.043 - 0.059 | 0.050 |
| 2 | 33 | W1 | MANNVILLE | 1 | 0.843 | 0.843 |
| | | | MIDALE | 22 | 0.051 - 0.094 | 0.078 |
| | | | FROBISHER-ALIDA | 4 | 0.047 - 0.060 | 0.054 |
| 3 | 33 | W1 | RAVENSCRAG | 1 | 2.400 | 2.400 |
| | | | FROBISHER | 3 | 0.049 - 0.061 | 0.054 |
| | | | FROBISHER-ALIDA | 4 | 0.044 - 0.058 | 0.052 |
| 4 | 33 | W1 | FROBISHER | 8 | 0.047 - 0.052 | 0.049 |
| | | | FROBISHER-ALIDA | 13 | 0.049 - 0.080 | 0.063 |
| 5 | 33 | W1 | MANNVILLE | 2 | 0.780 - 0.920 | 0.850 |
| | | | RIERDON | 2 | 0.270 - 0.370 | 0.320 |
| | | | GRAVELBOURG | 1 | 0.320 | 0.320 |
| | | | KISBEY | 1 | 0.070 | 0.070 |

# RESISTIVITY OF FORMATION WATERS @ 20°C

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 5 | 33 | W1 | FROBISHER-ALIDA | 7 | 0.047 - 0.070 | 0.059 |
| | | | ALIDA | 11 | 0.046 - 0.068 | 0.054 |
| | | | ALIDA-TILSTON | 1 | 0.055 | 0.055 |
| | | | BIRDBEAR | 1 | 0.050 | 0.050 |
| 6 | 33 | W1 | FROBISHER-ALIDA | 6 | 0.055 - 0.075 | 0.063 |
| | | | ALIDA | 11 | 0.047 - 0.060 | 0.054 |
| | | | TILSTON | 2 | 0.053 - 0.057 | 0.055 |
| 7 | 33 | W1 | TILSTON | 2 | 0.051 - 0.062 | 0.057 |
| 8 | 33 | W1 | TILSTON | 4 | 0.086 - 0.124 | 0.110 |
| | | | TILSTON-SOURIS VALLEY | 4 | 0.084 - 0.108 | 0.094 |
| | | | SOURIS VALLEY | 2 | 0.105 - 0.158 | 0.132 |
| | | | WINNIPEGOSIS | 1 | 0.056 | 0.056 |
| 9 | 33 | W1 | TILSTON | 9 | 0.093 - 0.131 | 0.114 |
| | | | TILSTON-SOURIS VALLEY | 5 | 0.125 - 0.148 | 0.136 |
| | | | SOURIS VALLEY | 13 | 0.105 - 0.148 | 0.131 |
| 14 | 33 | W1 | MANNVILLE | 1 | 0.302 | 0.302 |
| | | | JURASSIC | 1 | 0.316 | 0.316 |
| 20 | 33 | W1 | MANNVILLE | 2 | 0.240 - 0.265 | 0.253 |
| | | | SOURIS RIVER | 1 | 0.049 | 0.049 |
| 26 | 33 | W1 | WINNIPEG | 1 | 0.048 | 0.048 |
| 1 | 34 | W1 | MIDALE | 4 | 0.069 - 0.070 | 0.070 |
| | | | FROBISHER | 2 | 0.045 | 0.045 |
| 2 | 34 | W1 | MIDALE | 34 | 0.045 - 0.092 | 0.069 |
| | | | FROBISHER | 11 | 0.042 - 0.057 | 0.048 |
| | | | FROBISHER-ALIDA | 8 | 0.044 - 0.054 | 0.049 |
| 3 | 34 | W1 | FROBISHER | 7 | 0.039 - 0.060 | 0.050 |
| | | | FROBISHER-ALIDA | 4 | 0.040 - 0.045 | 0.044 |
| 4 | 34 | W1 | MANNVILLE | 2 | 0.690 - 0.750 | 0.720 |
| | | | FROBISHER | 5 | 0.046 - 0.052 | 0.048 |
| | | | FROBISHER-ALIDA | 11 | 0.040 - 0.050 | 0.046 |
| 5 | 34 | W1 | FROBISHER | 9 | 0.046 - 0.064 | 0.053 |
| | | | FROBISHER-ALIDA | 10 | 0.045 - 0.070 | 0.054 |
| 6 | 34 | W1 | FROBISHER-ALIDA | 8 | 0.048 - 0.060 | 0.052 |
| | | | ALIDA | 1 | 0.056 | 0.056 |
| 9 | 34 | W1 | TILSTON | 2 | 0.092 - 0.159 | 0.126 |
| | | | TILSTON-SOURIS VALLEY | 1 | 0.098 | 0.098 |
| | | | SOURIS VALLEY | 1 | 0.086 | 0.086 |
| 11 | 34 | W1 | MADISON (UNDIFF) | 1 | 0.240 | 0.240 |
| | | | BIRDBEAR | 1 | 0.071 | 0.071 |
| 2 | 1 | W2 | RATCLIFFE | 1 | 0.060 | 0.060 |
| | | | MIDALE | 6 | 0.051 - 0.075 | 0.066 |
| | | | FROBISHER | 2 | 0.058 - 0.059 | 0.059 |
| | | | FROBISHER-ALIDA | 2 | 0.040 - 0.049 | 0.045 |
| 3 | 1 | W2 | MANNVILLE | 1 | 0.704 | 0.704 |
| | | | MIDALE | 23 | 0.046 - 0.077 | 0.064 |
| | | | FROBISHER | 12 | 0.040 - 0.054 | 0.046 |
| | | | FROBISHER-ALIDA | 9 | 0.044 - 0.052 | 0.049 |
| 4 | 1 | W2 | FROBISHER | 21 | 0.040 - 0.055 | 0.049 |
| | | | FROBISHER-ALIDA | 12 | 0.041 - 0.051 | 0.045 |
| 5 | 1 | W2 | MANNVILLE | 2 | 0.790 - 0.840 | 0.815 |
| | | | RIERDON | 3 | 0.300 - 0.350 | 0.333 |
| | | | FROBISHER | 1 | 0.048 | 0.048 |
| | | | FROBISHER-ALIDA | 4 | 0.046 - 0.060 | 0.053 |
| | | | ALIDA | 1 | 0.049 | 0.049 |
| | | | BIRDBEAR | 1 | 0.048 | 0.048 |
| 6 | 1 | W2 | FROBISHER-ALIDA | 22 | 0.045 - 0.058 | 0.050 |
| | | | ALIDA | 1 | 0.048 | 0.048 |
| 7 | 1 | W2 | ALIDA | 1 | 0.052 | 0.052 |
| | | | TILSTON | 3 | 0.055 - 0.060 | 0.058 |
| 9 | 1 | W2 | TILSTON | 11 | 0.072 - 0.094 | 0.082 |
| | | | SOURIS VALLEY | 1 | 0.102 | 0.102 |
| 10 | 1 | W2 | TILSTON | 3 | 0.081 - 0.086 | 0.083 |
| | | | SOURIS VALLEY | 5 | 0.082 - 0.140 | 0.096 |
| 11 | 1 | W2 | SOURIS VALLEY | 2 | 0.190 - 0.220 | 0.205 |
| 14 | 1 | W2 | MANNVILLE | 2 | 0.390 - 0.630 | 0.510 |
| | | | JURASSIC | 12 | 0.220 - 0.560 | 0.380 |
| 15 | 1 | W2 | GRAVELBOURG | 1 | 0.310 | 0.310 |
| 16 | 1 | W2 | MANNVILLE | 1 | 0.490 | 0.490 |
| | | | JURASSIC | 1 | 0.290 | 0.290 |
| 1 | 2 | W2 | RATCLIFFE | 1 | 0.047 | 0.047 |
| | | | MIDALE | 1 | 0.044 | 0.044 |
| | | | FROBISHER | 4 | 0.034 - 0.052 | 0.044 |
| | | | FROBISHER-ALIDA | 2 | 0.045 | 0.045 |
| | | | BIRDBEAR | 1 | 0.052 | 0.052 |
| 2 | 2 | W2 | RATCLIFFE | 2 | 0.051 - 0.060 | 0.056 |
| | | | FROBISHER | 1 | 0.054 | 0.054 |
| | | | INTERLAKE | 1 | 0.048 | 0.048 |
| | | | RED RIVER | 1 | 0.047 | 0.047 |
| | | | DEADWOOD | 1 | 0.046 | 0.046 |
| 3 | 2 | W2 | MANNVILLE | 7 | 0.414 - 0.700 | 0.567 |
| | | | MIDALE | 30 | 0.045 - 0.070 | 0.057 |
| | | | FROBISHER | 10 | 0.044 - 0.060 | 0.051 |
| 4 | 2 | W2 | FROBISHER | 8 | 0.052 - 0.062 | 0.055 |
| 5 | 2 | W2 | FROBISHER | 6 | 0.051 - 0.062 | 0.058 |
| | | | FROBISHER-ALIDA | 2 | 0.047 - 0.051 | 0.049 |
| 6 | 2 | W2 | FROBISHER | 3 | 0.046 - 0.053 | 0.048 |
| | | | FROBISHER-ALIDA | 5 | 0.047 - 0.061 | 0.054 |
| | | | KISBEY | 1 | 0.042 | 0.042 |
| | | | ALIDA | 2 | 0.046 - 0.056 | 0.051 |
| 7 | 2 | W2 | ALIDA | 2 | 0.053 - 0.054 | 0.054 |
| | | | ALIDA-TILSTON | 1 | 0.050 | 0.050 |
| 8 | 2 | W2 | TILSTON | 1 | 0.053 | 0.053 |
| 9 | 2 | W2 | TILSTON | 1 | 0.067 | 0.067 |
| | | | SOURIS VALLEY | 1 | 0.068 | 0.068 |
| 10 | 2 | W2 | TILSTON | 7 | 0.083 - 0.116 | 0.092 |
| | | | SOURIS VALLEY | 3 | 0.083 - 0.164 | 0.113 |
| | | | BIRDBEAR | 1 | 0.053 | 0.053 |
| 11 | 2 | W2 | SOURIS VALLEY | 1 | 0.205 | 0.205 |
| | | | BIRDBEAR | 1 | 0.077 | 0.077 |
| 12 | 2 | W2 | WINNIPEGOSIS | 1 | 0.047 | 0.047 |
| 18 | 2 | W2 | JURASSIC | 1 | 0.205 | 0.205 |
| 21 | 2 | W2 | RED RIVER | 1 | 0.037 | 0.037 |
| | | | WINNIPEG | 1 | 0.039 | 0.039 |
| 1 | 3 | W2 | MIDALE | 5 | 0.044 - 0.047 | 0.045 |
| | | | FROBISHER | 1 | 0.044 | 0.044 |
| | | | FROBISHER-ALIDA | 1 | 0.052 | 0.052 |
| 2 | 3 | W2 | MANNVILLE | 2 | 0.700 - 0.840 | 0.770 |
| | | | RATCLIFFE | 1 | 0.070 | 0.070 |

## RESISTIVITY OF FORMATION WATERS @ 20°C

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 2 | 3 | W2 | MIDALE | 1 | 0.049 | 0.049 |
| | | | FROBISHER | 5 | 0.035 - 0.047 | 0.042 |
| 3 | 3 | W2 | MANNVILLE | 1 | 0.398 | 0.398 |
| | | | MIDALE | 9 | 0.053 - 0.067 | 0.061 |
| | | | FROBISHER | 4 | 0.046 - 0.062 | 0.055 |
| | | | FROBISHER-ALIDA | 1 | 0.058 | 0.058 |
| 4 | 3 | W2 | MIDALE | 1 | 0.046 | 0.046 |
| | | | FROBISHER | 3 | 0.044 - 0.060 | 0.053 |
| | | | FROBISHER-ALIDA | 1 | 0.055 | 0.055 |
| 5 | 3 | W2 | FROBISHER | 6 | 0.050 - 0.060 | 0.057 |
| | | | FROBISHER-ALIDA | 5 | 0.040 - 0.060 | 0.048 |
| | | | TILSTON | 1 | 0.060 | 0.060 |
| | | | BIRDBEAR | 1 | 0.060 | 0.060 |
| | | | STONY MOUNTAIN | 1 | 0.060 | 0.060 |
| 6 | 3 | W2 | MANNVILLE | 2 | 0.354 - 0.550 | 0.452 |
| | | | FROBISHER | 2 | 0.052 - 0.066 | 0.059 |
| | | | FROBISHER-ALIDA | 5 | 0.049 - 0.060 | 0.055 |
| | | | ALIDA | 1 | 0.060 | 0.060 |
| 8 | 3 | W2 | LOWER WATROUS | 1 | 0.048 | 0.048 |
| | | | ALIDA | 3 | 0.051 - 0.064 | 0.058 |
| | | | ALIDA-TILSTON | 1 | 0.062 | 0.062 |
| 9 | 3 | W2 | TILSTON | 4 | 0.057 - 0.092 | 0.066 |
| 10 | 3 | W2 | TILSTON | 3 | 0.070 - 0.116 | 0.090 |
| 11 | 3 | W2 | SOURIS VALLEY | 1 | 0.160 | 0.160 |
| 17 | 3 | W2 | MANNVILLE | 1 | 0.297 | 0.297 |
| 18 | 3 | W2 | JURASSIC | 3 | 0.214 - 0.332 | 0.282 |
| 19 | 3 | W2 | SOURIS VALLEY | 1 | 0.136 | 0.136 |
| | | | DUPEROW | 1 | 0.085 | 0.085 |
| 22 | 3 | W2 | JURASSIC | 1 | 0.240 | 0.240 |
| | | | SOURIS VALLEY | 1 | 0.150 | 0.150 |
| | | | DUPEROW | 1 | 0.068 | 0.068 |
| | | | SOURIS RIVER | 1 | 0.055 | 0.055 |
| | | | DAWSON BAY | 1 | 0.060 | 0.060 |
| 25 | 3 | W2 | BIRDBEAR | 1 | 0.188 | 0.188 |
| 1 | 4 | W2 | MANNVILLE | 1 | 0.294 | 0.294 |
| | | | MIDALE | 3 | 0.042 - 0.045 | 0.043 |
| | | | FROBISHER | 5 | 0.040 - 0.070 | 0.051 |
| | | | FROBISHER-ALIDA | 1 | 0.052 | 0.052 |
| 2 | 4 | W2 | MANNVILLE | 2 | 0.390 - 0.570 | 0.480 |
| | | | GRAVELBOURG | 1 | 0.188 | 0.188 |
| | | | POPLAR | 1 | 0.070 | 0.070 |
| | | | MIDALE | 4 | 0.040 - 0.048 | 0.045 |
| | | | FROBISHER | 8 | 0.042 - 0.052 | 0.045 |
| | | | FROBISHER-ALIDA | 1 | 0.049 | 0.049 |
| | | | BIRDBEAR | 1 | 0.046 | 0.046 |
| | | | DUPEROW | 1 | 0.074 | 0.074 |
| | | | WINNIPEGOSIS | 1 | 0.046 | 0.046 |
| | | | INTERLAKE | 1 | 0.046 | 0.046 |
| | | | STONY MOUNTAIN | 1 | 0.048 | 0.048 |
| | | | WINNIPEG | 1 | 0.048 | 0.048 |
| 3 | 4 | W2 | VIKING | 1 | 0.450 | 0.450 |
| | | | MANNVILLE | 6 | 0.325 - 0.920 | 0.497 |
| | | | JURASSIC | 2 | 0.410 - 0.440 | 0.425 |
| | | | MIDALE | 45 | 0.041 - 0.082 | 0.050 |
| | | | FROBISHER | 5 | 0.048 - 0.050 | 0.049 |
| | | | FROBISHER-ALIDA | 3 | 0.044 - 0.060 | 0.053 |
| | | | BIRDBEAR | 1 | 0.061 | 0.061 |
| | | | DUPEROW | 2 | 0.049 | 0.049 |
| | | | INTERLAKE | 1 | 0.044 | 0.044 |
| | | | RED RIVER | 1 | 0.049 | 0.049 |
| | | | DEADWOOD | 2 | 0.046 | 0.046 |
| 4 | 4 | W2 | MANNVILLE | 2 | 0.321 - 0.380 | 0.351 |
| | | | MIDALE | 12 | 0.050 - 0.063 | 0.054 |
| | | | FROBISHER | 8 | 0.047 - 0.055 | 0.050 |
| | | | FROBISHER-ALIDA | 2 | 0.044 - 0.070 | 0.057 |
| | | | BIRDBEAR | 1 | 0.045 | 0.045 |
| 5 | 4 | W2 | MIDALE | 12 | 0.046 - 0.086 | 0.062 |
| | | | FROBISHER | 2 | 0.056 - 0.063 | 0.060 |
| | | | FROBISHER-ALIDA | 1 | 0.046 | 0.046 |
| 6 | 4 | W2 | FROBISHER | 3 | 0.052 - 0.058 | 0.055 |
| | | | FROBISHER-ALIDA | 3 | 0.053 - 0.061 | 0.057 |
| 7 | 4 | W2 | FROBISHER | 2 | 0.052 | 0.052 |
| | | | FROBISHER-ALIDA | 4 | 0.044 - 0.073 | 0.054 |
| | | | KISBEY | 1 | 0.050 | 0.050 |
| | | | ALIDA | 1 | 0.052 | 0.052 |
| 8 | 4 | W2 | FROBISHER-ALIDA | 1 | 0.052 | 0.052 |
| | | | BIRDBEAR | 1 | 0.056 | 0.056 |
| 9 | 4 | W2 | ALIDA | 2 | 0.053 - 0.062 | 0.058 |
| 10 | 4 | W2 | ALIDA-TILSTON | 1 | 0.063 | 0.063 |
| | | | TILSTON | 2 | 0.073 - 0.075 | 0.074 |
| 11 | 4 | W2 | TILSTON | 8 | 0.093 - 0.148 | 0.125 |
| 12 | 4 | W2 | TILSTON | 1 | 0.169 | 0.169 |
| 16 | 4 | W2 | JURASSIC | 1 | 0.126 | 0.126 |
| 19 | 4 | W2 | SOURIS VALLEY | 1 | 0.093 | 0.093 |
| 1 | 5 | W2 | MIDALE | 5 | 0.043 - 0.054 | 0.048 |
| | | | FROBISHER | 1 | 0.041 | 0.041 |
| | | | FROBISHER-ALIDA | 3 | 0.047 - 0.056 | 0.051 |
| 2 | 5 | W2 | MIDALE | 4 | 0.045 - 0.053 | 0.049 |
| | | | FROBISHER | 2 | 0.041 - 0.046 | 0.044 |
| 3 | 5 | W2 | MANNVILLE | 2 | 0.345 - 0.358 | 0.352 |
| | | | MIDALE | 28 | 0.045 - 0.054 | 0.049 |
| | | | FROBISHER | 9 | 0.043 - 0.068 | 0.053 |
| 4 | 5 | W2 | MANNVILLE | 9 | 0.323 - 0.519 | 0.390 |
| | | | JURASSIC | 1 | 0.390 | 0.390 |
| | | | RATCLIFFE | 1 | 0.078 | 0.078 |
| | | | MIDALE | 57 | 0.046 - 0.069 | 0.058 |
| | | | FROBISHER | 16 | 0.044 - 0.065 | 0.054 |
| | | | FROBISHER-ALIDA | 3 | 0.048 - 0.052 | 0.050 |
| | | | ALIDA | 1 | 0.055 | 0.055 |
| | | | BIRDBEAR | 1 | 0.045 | 0.045 |
| | | | SOURIS RIVER | 1 | 0.043 | 0.043 |
| | | | WINNIPEGOSIS | 1 | 0.044 | 0.044 |
| 5 | 5 | W2 | MIDALE | 22 | 0.058 - 0.097 | 0.072 |
| | | | FROBISHER | 8 | 0.046 - 0.064 | 0.055 |
| 6 | 5 | W2 | FROBISHER | 11 | 0.054 - 0.077 | 0.060 |
| | | | FROBISHER-ALIDA | 2 | 0.048 - 0.055 | 0.052 |
| 7 | 5 | W2 | FROBISHER | 2 | 0.055 - 0.062 | 0.059 |
| | | | FROBISHER-ALIDA | 2 | 0.053 - 0.056 | 0.055 |
| | | | ALIDA | 3 | 0.071 - 0.088 | 0.078 |
| | | | TILSTON | 1 | 0.068 | 0.068 |
| 8 | 5 | W2 | MANNVILLE | 1 | 0.260 | 0.260 |
| 9 | 5 | W2 | ALIDA | 2 | 0.057 - 0.075 | 0.066 |
| 10 | 5 | W2 | FROBISHER | 1 | 0.066 | 0.066 |
| | | | ALIDA | 1 | 0.066 | 0.066 |
| | | | BIRDBEAR | 1 | 0.054 | 0.054 |
| 11 | 5 | W2 | TILSTON | 4 | 0.120 - 0.207 | 0.142 |

## RESISTIVITY OF FORMATION WATERS @ 20°C

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 12 | 5 | W2 | SOURIS VALLEY | 1 | 0.158 | 0.158 |
| 24 | 5 | W2 | SOURIS VALLEY | 1 | 0.139 | 0.139 |
| 26 | 5 | W2 | TORQUAY | 1 | 0.150 | 0.150 |
| 27 | 5 | W2 | VIKING | 1 | 0.910 | 0.910 |
| 1 | 6 | W2 | FROBISHER | 1 | 0.047 | 0.047 |
| 2 | 6 | W2 | FROBISHER-ALIDA | 1 | 0.080 | 0.080 |
| | | | DUPEROW | 2 | 0.054 - 0.136 | 0.095 |
| 3 | 6 | W2 | POPLAR | 1 | 0.060 | 0.060 |
| | | | MIDALE | 1 | 0.060 | 0.060 |
| | | | FROBISHER | 1 | 0.060 | 0.060 |
| 4 | 6 | W2 | MANNVILLE | 3 | 0.251 - 0.266 | 0.256 |
| | | | MIDALE | 28 | 0.047 - 0.094 | 0.070 |
| | | | FROBISHER | 52 | 0.031 - 0.087 | 0.048 |
| 5 | 6 | W2 | VIKING | 1 | 0.375 | 0.375 |
| | | | MANNVILLE | 4 | 0.120 - 0.620 | 0.375 |
| | | | JURASSIC | 2 | 0.275 - 0.320 | 0.298 |
| | | | RATCLIFFE | 1 | 0.091 | 0.091 |
| | | | MIDALE | 16 | 0.054 - 0.094 | 0.074 |
| | | | FROBISHER | 6 | 0.048 - 0.070 | 0.060 |
| | | | TILSTON | 1 | 0.062 | 0.062 |
| 6 | 6 | W2 | MIDALE | 1 | 0.062 | 0.062 |
| | | | BIRDBEAR | 2 | 0.054 - 0.056 | 0.055 |
| | | | WINNIPEGOSIS | 1 | 0.053 | 0.053 |
| 7 | 6 | W2 | FROBISHER | 3 | 0.055 - 0.069 | 0.062 |
| | | | ALIDA | 1 | 0.057 | 0.057 |
| | | | BIRDBEAR | 3 | 0.047 - 0.058 | 0.051 |
| 9 | 6 | W2 | FROBISHER-ALIDA | 6 | 0.046 - 0.060 | 0.055 |
| | | | ALIDA | 1 | 0.081 | 0.081 |
| | | | BIRDBEAR | 1 | 0.060 | 0.060 |
| 10 | 6 | W2 | TILSTON | 1 | 0.172 | 0.172 |
| 11 | 6 | W2 | TILSTON | 1 | 0.173 | 0.173 |
| 12 | 6 | W2 | TILSTON | 4 | 0.110 - 0.194 | 0.141 |
| 16 | 6 | W2 | MANNVILLE | 2 | 0.197 - 0.300 | 0.249 |
| 19 | 6 | W2 | JURASSIC | 1 | 0.180 | 0.180 |
| 22 | 6 | W2 | MANNVILLE | 1 | 0.121 | 0.121 |
| 23 | 6 | W2 | MANNVILLE | 1 | 0.117 | 0.117 |
| 28 | 6 | W2 | DUPEROW | 1 | 0.150 | 0.150 |
| 1 | 7 | W2 | POPLAR | 1 | 0.050 | 0.050 |
| | | | MIDALE | 1 | 0.050 | 0.050 |
| 3 | 7 | W2 | VIKING | 1 | 0.272 | 0.272 |
| | | | POPLAR | 1 | 0.057 | 0.057 |
| | | | MIDALE | 1 | 0.050 | 0.050 |
| | | | FROBISHER-ALIDA | 1 | 0.056 | 0.056 |
| | | | BIRDBEAR | 1 | 0.046 | 0.046 |
| 4 | 7 | W2 | MIDALE | 13 | 0.043 - 0.068 | 0.054 |
| | | | FROBISHER | 6 | 0.049 - 0.057 | 0.051 |
| 5 | 7 | W2 | FROBISHER | 2 | 0.061 | 0.061 |
| 6 | 7 | W2 | FROBISHER | 9 | 0.055 - 0.075 | 0.065 |
| 7 | 7 | W2 | FROBISHER | 2 | 0.054 - 0.056 | 0.055 |
| | | | FROBISHER-ALIDA | 1 | 0.059 | 0.059 |
| 8 | 7 | W2 | FROBISHER | 1 | 0.065 | 0.065 |
| 9 | 7 | W2 | MANNVILLE | 1 | 0.153 | 0.153 |
| | | | FROBISHER-ALIDA | 6 | 0.046 - 0.056 | 0.053 |
| | | | ALIDA | 4 | 0.087 - 0.116 | 0.098 |
| 10 | 7 | W2 | FROBISHER-ALIDA | 5 | 0.100 - 0.120 | 0.108 |
| | | | ALIDA | 5 | 0.078 - 0.096 | 0.086 |
| | | | TILSTON | 5 | 0.095 - 0.153 | 0.112 |
| | | | BIRDBEAR | 1 | 0.078 | 0.078 |
| 11 | 7 | W2 | ALIDA | 1 | 0.090 | 0.090 |
| | | | TILSTON | 3 | 0.112 - 0.128 | 0.118 |
| 13 | 7 | W2 | TILSTON | 1 | 0.194 | 0.194 |
| 16 | 7 | W2 | JURASSIC | 2 | 0.175 - 0.183 | 0.179 |
| | | | SOURIS VALLEY | 1 | 0.478 | 0.478 |
| 19 | 7 | W2 | VIKING | 1 | 0.570 | 0.570 |
| 21 | 7 | W2 | JURASSIC | 1 | 0.102 | 0.102 |
| 27 | 7 | W2 | DAWSON BAY | 1 | 0.061 | 0.061 |
| 29 | 7 | W2 | VIKING | 1 | 0.320 | 0.320 |
| | | | INTERLAKE | 1 | 0.056 | 0.056 |
| 1 | 8 | W2 | FROBISHER | 1 | 0.052 | 0.052 |
| 2 | 8 | W2 | MIDALE | 1 | 0.062 | 0.062 |
| 3 | 8 | W2 | POPLAR | 1 | 0.060 | 0.060 |
| | | | MIDALE | 1 | 0.060 | 0.060 |
| | | | DUPEROW | 2 | 0.060 | 0.060 |
| 4 | 8 | W2 | MIDALE | 4 | 0.051 - 0.082 | 0.064 |
| | | | FROBISHER | 3 | 0.061 - 0.085 | 0.072 |
| 5 | 8 | W2 | FROBISHER | 2 | 0.055 - 0.073 | 0.064 |
| 6 | 8 | W2 | MANNVILLE | 1 | 0.320 | 0.320 |
| | | | MIDALE | 7 | 0.100 - 0.180 | 0.126 |
| | | | FROBISHER | 2 | 0.081 - 0.094 | 0.088 |
| | | | FROBISHER-ALIDA | 1 | 0.065 | 0.065 |
| 7 | 8 | W2 | FROBISHER | 4 | 0.057 - 0.069 | 0.064 |
| | | | FROBISHER-ALIDA | 2 | 0.059 - 0.063 | 0.061 |
| | | | BIRDBEAR | 2 | 0.046 - 0.050 | 0.048 |
| 8 | 8 | W2 | FROBISHER | 4 | 0.058 - 0.065 | 0.061 |
| | | | FROBISHER-ALIDA | 5 | 0.055 - 0.063 | 0.060 |
| | | | ALIDA | 1 | 0.072 | 0.072 |
| | | | DUPEROW | 1 | 0.049 | 0.049 |
| | | | INTERLAKE | 1 | 0.060 | 0.060 |
| 9 | 8 | W2 | FROBISHER-ALIDA | 3 | 0.112 - 0.120 | 0.117 |
| | | | ALIDA | 1 | 0.145 | 0.145 |
| 10 | 8 | W2 | FROBISHER-ALIDA | 8 | 0.103 - 0.151 | 0.116 |
| | | | ALIDA | 8 | 0.081 - 0.165 | 0.116 |
| 12 | 8 | W2 | TILSTON | 1 | 0.215 | 0.215 |
| | | | BIRDBEAR | 1 | 0.140 | 0.140 |
| | | | DUPEROW | 1 | 0.157 | 0.157 |
| | | | RED RIVER | 1 | 0.043 | 0.043 |
| 14 | 8 | W2 | SOURIS VALLEY | 1 | 0.230 | 0.230 |
| | | | BIRDBEAR | 1 | 0.120 | 0.120 |
| | | | DUPEROW | 1 | 0.070 | 0.070 |
| 16 | 8 | W2 | SOURIS VALLEY | 1 | 0.350 | 0.350 |
| 2 | 9 | W2 | MIDALE-FROBISHER | 1 | 0.050 | 0.050 |
| | | | FROBISHER | 1 | 0.049 | 0.049 |
| 4 | 9 | W2 | MIDALE | 3 | 0.041 - 0.055 | 0.046 |

## RESISTIVITY OF FORMATION WATERS @ 20°C

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 4 | 9 | W2 | FROBISHER-ALIDA | 1 | 0.055 | 0.055 |
| 5 | 9 | W2 | FROBISHER | 1 | 0.070 | 0.070 |
| 6 | 9 | W2 | MANNVILLE | 1 | 0.356 | 0.356 |
| | | | MIDALE | 24 | 0.063 - 0.185 | 0.109 |
| | | | FROBISHER | 4 | 0.058 - 0.064 | 0.061 |
| | | | FROBISHER-ALIDA | 2 | 0.062 - 0.070 | 0.066 |
| 7 | 9 | W2 | MANNVILLE | 1 | 0.347 | 0.347 |
| | | | MIDALE | 2 | 0.064 - 0.069 | 0.067 |
| | | | FROBISHER-ALIDA | 1 | 0.055 | 0.055 |
| 9 | 9 | W2 | SOURIS VALLEY | 1 | 0.195 | 0.195 |
| 10 | 9 | W2 | FROBISHER-ALIDA | 2 | 0.172 - 0.200 | 0.186 |
| | | | DUPEROW | 1 | 0.059 | 0.059 |
| | | | WINNIPEGOSIS | 1 | 0.050 | 0.050 |
| | | | INTERLAKE | 1 | 0.051 | 0.051 |
| | | | RED RIVER | 1 | 0.048 | 0.048 |
| 20 | 9 | W2 | VIKING | 1 | 0.088 | 0.088 |
| | | | JURASSIC | 1 | 0.077 | 0.077 |
| 21 | 9 | W2 | JURASSIC | 1 | 0.096 | 0.096 |
| 22 | 9 | W2 | JURASSIC | 1 | 0.118 | 0.118 |
| 26 | 9 | W2 | VIKING | 1 | 0.670 | 0.670 |
| | | | SOURIS VALLEY | 1 | 0.110 | 0.110 |
| | | | BIRDBEAR | 1 | 0.093 | 0.093 |
| 33 | 9 | W2 | DUPEROW | 2 | 0.080 - 0.081 | 0.081 |
| 46 | 9 | W2 | DAWSON BAY | 1 | 1.600 | 1.600 |
| | | | DEADWOOD | 1 | 0.080 | 0.080 |
| 2 | 10 | W2 | MIDALE-FROBISHER | 1 | 0.050 | 0.050 |
| | | | FROBISHER | 1 | 0.049 | 0.049 |
| 4 | 10 | W2 | FROBISHER | 1 | 0.065 | 0.065 |
| 5 | 10 | W2 | MANNVILLE | 1 | 0.410 | 0.410 |
| | | | FROBISHER | 1 | 0.070 | 0.070 |
| 6 | 10 | W2 | MANNVILLE | 3 | 0.417 - 0.490 | 0.441 |
| | | | MIDALE | 92 | 0.058 - 0.093 | 0.074 |
| | | | FROBISHER | 10 | 0.056 - 0.087 | 0.072 |
| | | | FROBISHER-ALIDA | 1 | 0.064 | 0.064 |
| | | | BIRDBEAR | 1 | 0.051 | 0.051 |
| | | | DUPEROW | 1 | 0.049 | 0.049 |
| | | | WINNIPEGOSIS | 1 | 0.048 | 0.048 |
| 7 | 10 | W2 | MIDALE | 8 | 0.064 - 0.118 | 0.097 |
| | | | FROBISHER | 17 | 0.057 - 0.079 | 0.067 |
| | | | FROBISHER-ALIDA | 1 | 0.058 | 0.058 |
| 8 | 10 | W2 | FROBISHER | 4 | 0.070 - 0.181 | 0.122 |
| | | | BIRDBEAR | 1 | 0.056 | 0.056 |
| 9 | 10 | W2 | FROBISHER | 1 | 0.412 | 0.412 |
| 10 | 10 | W2 | FROBISHER-ALIDA | 1 | 0.157 | 0.157 |
| | | | ALIDA | 1 | 0.174 | 0.174 |
| 11 | 10 | W2 | ALIDA | 1 | 0.214 | 0.214 |
| 14 | 10 | W2 | TILSTON | 1 | 0.190 | 0.190 |
| 20 | 10 | W2 | JURASSIC | 1 | 0.104 | 0.104 |
| 24 | 10 | W2 | MANNVILLE | 2 | 0.100 - 0.120 | 0.110 |
| | | | BIRDBEAR | 1 | 0.084 | 0.084 |
| | | | SOURIS RIVER | 1 | 0.049 | 0.049 |
| 34 | 10 | W2 | MANNVILLE | 1 | 0.182 | 0.182 |
| | | | DUPEROW | 2 | 0.158 - 0.168 | 0.163 |

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 34 | 10 | W2 | WINNIPEG | 1 | 0.066 | 0.066 |
| 2 | 11 | W2 | MIDALE | 1 | 0.060 | 0.060 |
| 3 | 11 | W2 | MIDALE | 3 | 0.050 - 0.054 | 0.051 |
| | | | MIDALE-FROBISHER | 1 | 0.068 | 0.068 |
| | | | FROBISHER | 1 | 0.065 | 0.065 |
| 4 | 11 | W2 | MIDALE | 1 | 0.080 | 0.080 |
| | | | FROBISHER | 1 | 0.050 | 0.050 |
| | | | INTERLAKE | 1 | 0.042 | 0.042 |
| | | | ORDOVICIAN | 1 | 0.043 | 0.043 |
| 5 | 11 | W2 | MIDALE | 3 | 0.058 - 0.074 | 0.069 |
| | | | FROBISHER | 1 | 0.064 | 0.064 |
| 6 | 11 | W2 | MANNVILLE | 2 | 0.370 - 0.427 | 0.399 |
| | | | MIDALE | 78 | 0.051 - 0.094 | 0.070 |
| | | | FROBISHER | 18 | 0.030 - 0.078 | 0.057 |
| 7 | 11 | W2 | FROBISHER | 13 | 0.065 - 0.161 | 0.100 |
| | | | BAKKEN | 3 | 0.044 - 0.057 | 0.050 |
| 8 | 11 | W2 | FROBISHER | 12 | 0.088 - 0.300 | 0.187 |
| | | | FROBISHER-ALIDA | 2 | 0.148 - 0.150 | 0.149 |
| 9 | 11 | W2 | BIRDBEAR | 1 | 0.112 | 0.112 |
| 10 | 11 | W2 | ALIDA | 3 | 0.227 - 0.257 | 0.240 |
| 13 | 11 | W2 | BAKKEN | 1 | 0.250 | 0.250 |
| 23 | 11 | W2 | JURASSIC | 1 | 0.080 | 0.080 |
| 3 | 12 | W2 | MIDALE | 2 | 0.058 - 0.069 | 0.064 |
| | | | FROBISHER | 1 | 0.059 | 0.059 |
| 4 | 12 | W2 | VIKING | 1 | 0.820 | 0.820 |
| | | | FROBISHER | 1 | 0.062 | 0.062 |
| 5 | 12 | W2 | MIDALE | 11 | 0.056 - 0.078 | 0.068 |
| | | | FROBISHER | 2 | 0.063 - 0.073 | 0.068 |
| | | | FROBISHER-ALIDA | 1 | 0.062 | 0.062 |
| 6 | 12 | W2 | MIDALE | 28 | 0.060 - 0.100 | 0.074 |
| | | | FROBISHER | 1 | 0.054 | 0.054 |
| 7 | 12 | W2 | MIDALE | 4 | 0.061 - 0.086 | 0.076 |
| | | | FROBISHER | 8 | 0.172 - 0.335 | 0.223 |
| 8 | 12 | W2 | FROBISHER | 4 | 0.208 - 0.244 | 0.224 |
| 9 | 12 | W2 | FROBISHER | 1 | 0.230 | 0.230 |
| 10 | 12 | W2 | FROBISHER | 2 | 0.210 - 0.365 | 0.288 |
| | | | ALIDA | 1 | 0.233 | 0.233 |
| 11 | 12 | W2 | MANNVILLE | 1 | 0.770 | 0.770 |
| | | | ALIDA | 1 | 0.340 | 0.340 |
| 13 | 12 | W2 | TILSTON | 2 | 0.270 - 0.312 | 0.291 |
| 14 | 12 | W2 | BIRDBEAR | 1 | 0.205 | 0.205 |
| 20 | 12 | W2 | JURASSIC | 1 | 0.082 | 0.082 |
| 21 | 12 | W2 | MANNVILLE | 1 | 0.084 | 0.084 |
| 24 | 12 | W2 | BIRDBEAR | 1 | 0.130 | 0.130 |
| 30 | 12 | W2 | DAWSON BAY | 1 | 0.049 | 0.049 |
| 32 | 12 | W2 | DAWSON BAY | 1 | 0.082 | 0.082 |
| | | | WINNIPEGOSIS | 1 | 0.055 | 0.055 |
| | | | INTERLAKE | 1 | 0.063 | 0.063 |
| 1 | 13 | W2 | RATCLIFFE | 1 | 0.067 | 0.067 |

## RESISTIVITY OF FORMATION WATERS @ 20°C

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 2 | 13 | W2 | ALIDA | 1 | 0.064 | 0.064 |
| | | | DUPEROW | 1 | 0.043 | 0.043 |
| 3 | 13 | W2 | MIDALE | 5 | 0.054 - 0.068 | 0.059 |
| | | | FROBISHER | 2 | 0.060 - 0.066 | 0.063 |
| | | | RED RIVER | 1 | 0.044 | 0.044 |
| 5 | 13 | W2 | MIDALE | 9 | 0.062 - 0.078 | 0.067 |
| | | | MIDALE-FROBISHER | 1 | 0.142 | 0.142 |
| 6 | 13 | W2 | MANNVILLE | 7 | 0.360 - 0.514 | 0.422 |
| | | | MIDALE | 32 | 0.057 - 0.159 | 0.095 |
| | | | MIDALE-FROBISHER | 7 | 0.070 - 0.144 | 0.107 |
| | | | FROBISHER | 7 | 0.063 - 0.251 | 0.140 |
| | | | FROBISHER-ALIDA | 2 | 0.066 - 0.250 | 0.158 |
| 7 | 13 | W2 | VIKING | 1 | 0.850 | 0.850 |
| | | | MANNVILLE | 1 | 0.880 | 0.880 |
| | | | GRAVELBOURG | 1 | 0.280 | 0.280 |
| | | | MIDALE | 13 | 0.095 - 0.180 | 0.131 |
| | | | FROBISHER | 2 | 0.200 - 0.210 | 0.205 |
| | | | FROBISHER-ALIDA | 3 | 0.230 - 0.390 | 0.290 |
| 9 | 13 | W2 | FROBISHER-ALIDA | 1 | 0.218 | 0.218 |
| | | | BIRDBEAR | 1 | 0.116 | 0.116 |
| 10 | 13 | W2 | FROBISHER-ALIDA | 1 | 0.205 | 0.205 |
| 13 | 13 | W2 | TILSTON | 1 | 0.230 | 0.230 |
| 28 | 13 | W2 | BIRDBEAR | 1 | 0.220 | 0.220 |
| 45 | 13 | W2 | DEADWOOD | 1 | 0.066 | 0.066 |
| 52 | 13 | W2 | WINNIPEG | 1 | 2.560 | 2.560 |
| 2 | 14 | W2 | VIKING | 1 | 0.740 | 0.740 |
| | | | MANNVILLE | 1 | 0.850 | 0.850 |
| | | | RATCLIFFE | 1 | 0.062 - 0.067 | 0.064 |
| | | | RATCLIFFE-MIDALE | 1 | 0.068 | 0.068 |
| 3 | 14 | W2 | VIKING | 1 | 1.120 | 1.120 |
| | | | RATCLIFFE-MIDALE | 1 | 0.089 | 0.089 |
| | | | FROBISHER-ALIDA | 1 | 0.058 | 0.058 |
| 4 | 14 | W2 | BAKKEN | 1 | 0.050 | 0.050 |
| | | | WINNIPEGOSIS | 1 | 0.053 | 0.053 |
| 5 | 14 | W2 | MIDALE | 8 | 0.060 - 0.073 | 0.066 |
| | | | FROBISHER | 3 | 0.060 - 0.092 | 0.071 |
| 6 | 14 | W2 | MIDALE | 39 | 0.064 - 0.272 | 0.143 |
| | | | MIDALE-FROBISHER | 3 | 0.157 - 0.220 | 0.183 |
| | | | FROBISHER | 3 | 0.220 - 0.286 | 0.249 |
| | | | FROBISHER-ALIDA | 2 | 0.273 - 0.300 | 0.287 |
| 7 | 14 | W2 | MIDALE | 5 | 0.145 - 0.210 | 0.168 |
| | | | WINNIPEGOSIS | 1 | 0.047 | 0.047 |
| 9 | 14 | W2 | VIKING | 1 | 0.810 | 0.810 |
| 10 | 14 | W2 | BIRDBEAR | 1 | 0.105 | 0.105 |
| | | | INTERLAKE | 1 | 0.045 | 0.045 |
| | | | WINNIPEG | 1 | 0.042 | 0.042 |
| 11 | 14 | W2 | VIKING | 1 | 0.830 | 0.830 |
| | | | JURASSIC | 1 | 0.600 | 0.600 |
| | | | FROBISHER-ALIDA | 1 | 0.260 | 0.260 |
| | | | ALIDA | 1 | 0.284 | 0.284 |
| | | | BAKKEN | 1 | 0.180 | 0.180 |
| 15 | 14 | W2 | BIRDBEAR | 1 | 0.243 | 0.243 |
| 52 | 14 | W2 | WINNIPEG | 1 | 1.340 | 1.340 |
| | | | DEADWOOD | 1 | 1.500 | 1.500 |
| 1 | 15 | W2 | VIKING | 1 | 0.890 | 0.890 |
| | | | MANNVILLE | 1 | 0.840 | 0.840 |
| | | | POPLAR-RATCLIFFE | 1 | 0.056 | 0.056 |
| | | | RATCLIFFE | 12 | 0.047 - 0.071 | 0.058 |
| | | | MIDALE | 2 | 0.057 - 0.075 | 0.066 |
| | | | TILSTON | 1 | 0.098 | 0.098 |
| 2 | 15 | W2 | RATCLIFFE | 1 | 0.067 | 0.067 |
| | | | MIDALE | 1 | 0.060 | 0.060 |
| 3 | 15 | W2 | MIDALE | 1 | 0.062 | 0.062 |
| | | | FROBISHER-ALIDA | 1 | 0.091 | 0.091 |
| 5 | 15 | W2 | MIDALE | 3 | 0.265 - 0.270 | 0.267 |
| | | | FROBISHER | 1 | 0.277 | 0.277 |
| 6 | 15 | W2 | VIKING | 1 | 1.100 | 1.100 |
| | | | MIDALE | 1 | 0.248 | 0.248 |
| 7 | 15 | W2 | MIDALE | 4 | 0.212 - 0.290 | 0.256 |
| | | | FROBISHER-ALIDA | 1 | 0.380 | 0.380 |
| | | | BIRDBEAR | 1 | 0.087 | 0.087 |
| | | | WINNIPEGOSIS | 1 | 0.048 | 0.048 |
| 22 | 15 | W2 | RED RIVER | 1 | 0.077 | 0.077 |
| 25 | 15 | W2 | BIRDBEAR | 1 | 0.086 | 0.086 |
| 1 | 16 | W2 | VIKING | 2 | 0.850 - 0.980 | 0.915 |
| | | | MANNVILLE | 2 | 0.700 - 0.740 | 0.720 |
| | | | RATCLIFFE | 6 | 0.046 - 0.072 | 0.056 |
| | | | FROBISHER-ALIDA | 1 | 0.049 | 0.049 |
| 2 | 16 | W2 | RATCLIFFE | 1 | 0.066 | 0.066 |
| 3 | 16 | W2 | RATCLIFFE | 1 | 0.048 | 0.048 |
| | | | MIDALE-FROBISHER | 1 | 0.053 | 0.053 |
| 4 | 16 | W2 | POPLAR | 1 | 0.600 | 0.600 |
| | | | MIDALE | 1 | 0.110 | 0.110 |
| 6 | 16 | W2 | MIDALE | 2 | 0.266 - 0.290 | 0.278 |
| | | | BIRDBEAR | 1 | 0.049 | 0.049 |
| 7 | 16 | W2 | VIKING | 1 | 0.780 | 0.780 |
| | | | MIDALE | 1 | 0.300 | 0.300 |
| | | | FROBISHER | 1 | 0.340 | 0.340 |
| 8 | 16 | W2 | MIDALE | 4 | 0.135 - 0.305 | 0.244 |
| | | | DUPEROW | 1 | 0.053 | 0.053 |
| 9 | 16 | W2 | FROBISHER | 1 | 0.230 | 0.230 |
| | | | FROBISHER-ALIDA | 1 | 0.240 | 0.240 |
| | | | BIRDBEAR | 1 | 0.064 | 0.064 |
| 14 | 16 | W2 | RED RIVER | 1 | 0.056 | 0.056 |
| 19 | 16 | W2 | BIRDBEAR | 1 | 0.110 | 0.110 |
| 21 | 16 | W2 | DUPEROW | 1 | 0.060 | 0.060 |
| | | | SOURIS RIVER | 1 | 0.055 | 0.055 |
| | | | WINNIPEGOSIS | 1 | 0.069 | 0.069 |
| | | | INTERLAKE | 1 | 0.074 | 0.074 |
| | | | RED RIVER | 1 | 0.074 | 0.074 |
| | | | WINNIPEG | 1 | 0.079 | 0.079 |
| 23 | 16 | W2 | RED RIVER | 1 | 0.067 | 0.067 |
| | | | WINNIPEG | 1 | 0.078 | 0.078 |
| 25 | 16 | W2 | BIRDBEAR | 1 | 0.110 | 0.110 |
| 31 | 16 | W2 | THREE FORKS | 1 | 0.127 | 0.127 |
| 1 | 17 | W2 | VIKING | 1 | 0.680 | 0.680 |
| | | | MANNVILLE | 1 | 0.845 | 0.845 |
| | | | POPLAR | 1 | 0.046 | 0.046 |
| | | | RATCLIFFE | 3 | 0.035 - 0.065 | 0.053 |

## RESISTIVITY OF FORMATION WATERS @ 20°C

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 1 | 17 | W2 | RED RIVER | 1 | 0.051 | 0.051 |
| 2 | 17 | W2 | MANNVILLE | 1 | 1.000 | 1.000 |
| | | | RATCLIFFE | 1 | 0.052 | 0.052 |
| | | | MIDALE | 1 | 0.093 | 0.093 |
| | | | BIRDBEAR | 1 | 0.072 | 0.072 |
| 3 | 17 | W2 | RATCLIFFE | 1 | 0.085 | 0.085 |
| 4 | 17 | W2 | RATCLIFFE | 2 | 0.063 - 0.086 | 0.075 |
| | | | BIRDBEAR | 1 | 0.051 | 0.051 |
| | | | WINNIPEG | 1 | 0.044 | 0.044 |
| 5 | 17 | W2 | VIKING | 1 | 0.790 | 0.790 |
| | | | LOWER SHAUNAVON | 2 | 0.360 | 0.360 |
| | | | MIDALE | 2 | 0.410 | 0.410 |
| | | | FROBISHER-ALIDA | 2 | 0.180 - 0.380 | 0.280 |
| | | | BIRDBEAR | 1 | 0.080 | 0.080 |
| 13 | 17 | W2 | RIERDON | 1 | 0.330 | 0.330 |
| | | | MADISON (UNDIFF) | 1 | 0.305 | 0.305 |
| 27 | 17 | W2 | DAWSON BAY | 1 | 0.046 | 0.046 |
| | | | WINNIPEGOSIS | 1 | 0.048 | 0.048 |
| 35 | 17 | W2 | INTERLAKE | 1 | 0.043 | 0.043 |
| 48 | 17 | W2 | DAWSON BAY | 1 | 0.790 | 0.790 |
| | | | WINNIPEGOSIS | 1 | 1.470 | 1.470 |
| | | | INTERLAKE | 1 | 2.170 | 2.170 |
| | | | DEADWOOD | 1 | 2.430 | 2.430 |
| 1 | 18 | W2 | BIRDBEAR | 1 | 0.057 | 0.057 |
| 2 | 18 | W2 | RED RIVER | 1 | 0.050 | 0.050 |
| 4 | 18 | W2 | RATCLIFFE | 1 | 0.116 | 0.116 |
| 5 | 18 | W2 | MIDALE | 1 | 0.398 | 0.398 |
| | | | BIRDBEAR | 1 | 0.110 | 0.110 |
| 6 | 18 | W2 | RIERDON | 1 | 0.104 | 0.104 |
| | | | MIDALE | 1 | 0.330 | 0.330 |
| | | | BIRDBEAR | 1 | 0.115 | 0.115 |
| | | | RED RIVER | 1 | 0.047 | 0.047 |
| 7 | 18 | W2 | MIDALE | 1 | 0.460 | 0.460 |
| | | | TILSTON | 1 | 0.222 | 0.222 |
| | | | BIRDBEAR | 1 | 0.106 | 0.106 |
| | | | DUPEROW | 1 | 0.061 | 0.061 |
| 12 | 18 | W2 | VIKING | 1 | 1.200 | 1.200 |
| | | | GRAVELBOURG | 1 | 0.900 | 0.900 |
| | | | FROBISHER-ALIDA | 1 | 0.500 | 0.500 |
| 16 | 18 | W2 | MANNVILLE | 1 | 0.453 | 0.453 |
| 28 | 18 | W2 | DAWSON BAY | 1 | 0.056 | 0.056 |
| 46 | 18 | W2 | STONY MOUNTAIN | 1 | 0.141 | 0.141 |
| | | | WINNIPEG | 1 | 0.104 | 0.104 |
| 50 | 18 | W2 | DAWSON BAY | 2 | 3.200 | 3.200 |
| | | | WINNIPEG | 1 | 3.300 | 3.300 |
| 1 | 19 | W2 | BIRDBEAR | 1 | 0.049 | 0.049 |
| 2 | 19 | W2 | MANNVILLE | 1 | 1.130 | 1.130 |
| | | | POPLAR | 3 | 0.050 - 0.086 | 0.071 |
| | | | RATCLIFFE | 3 | 0.069 - 0.100 | 0.082 |
| | | | BIRDBEAR | 4 | 0.037 - 0.068 | 0.051 |
| | | | INTERLAKE | 1 | 0.061 | 0.061 |
| | | | STONY MOUNTAIN | 1 | 0.130 | 0.130 |
| | | | RED RIVER | 2 | 0.052 - 0.060 | 0.056 |
| | | | WINNIPEG | 1 | 0.060 | 0.060 |
| 3 | 19 | W2 | RATCLIFFE | 2 | 0.082 - 0.091 | 0.087 |
| 3 | 19 | W2 | BIRDBEAR | 1 | 0.047 | 0.047 |
| 4 | 19 | W2 | BIRDBEAR | 1 | 0.227 | 0.227 |
| | | | RED RIVER | 1 | 0.048 | 0.048 |
| 5 | 19 | W2 | RATCLIFFE | 1 | 0.155 | 0.155 |
| | | | RATCLIFFE-MIDALE | 2 | 0.310 - 0.320 | 0.315 |
| 6 | 19 | W2 | RATCLIFFE-MIDALE | 1 | 0.390 | 0.390 |
| | | | MIDALE | 6 | 0.265 - 0.383 | 0.330 |
| | | | BAKKEN | 1 | 0.067 | 0.067 |
| | | | BIRDBEAR | 1 | 0.072 | 0.072 |
| 8 | 19 | W2 | BIRDBEAR | 1 | 0.059 | 0.059 |
| 10 | 19 | W2 | VIKING | 1 | 1.050 | 1.050 |
| | | | GRAVELBOURG | 1 | 0.690 | 0.690 |
| | | | RATCLIFFE | 1 | 0.420 | 0.420 |
| 13 | 19 | W2 | WATROUS | 1 | 0.340 | 0.340 |
| | | | FROBISHER-ALIDA | 1 | 0.380 | 0.380 |
| | | | BIRDBEAR | 1 | 0.120 | 0.120 |
| 42 | 19 | W2 | SOURIS RIVER | 1 | 0.100 | 0.100 |
| 47 | 19 | W2 | WINNIPEGOSIS | 1 | 1.180 | 1.180 |
| 1 | 20 | W2 | POPLAR | 1 | 0.068 | 0.068 |
| | | | RATCLIFFE | 1 | 0.090 | 0.090 |
| | | | BIRDBEAR | 2 | 0.070 - 0.080 | 0.075 |
| | | | INTERLAKE | 1 | 0.055 | 0.055 |
| | | | WINNIPEG | 1 | 0.053 | 0.053 |
| 2 | 20 | W2 | RATCLIFFE | 1 | 0.210 | 0.210 |
| | | | FROBISHER-ALIDA | 1 | 0.140 | 0.140 |
| 3 | 20 | W2 | MADISON (UNDIFF) | 1 | 0.973 | 0.973 |
| 4 | 20 | W2 | MADISON (UNDIFF) | 1 | 0.672 | 0.672 |
| | | | FROBISHER-ALIDA | 1 | 0.520 | 0.520 |
| | | | DUPEROW | 1 | 0.080 | 0.080 |
| | | | WINNIPEGOSIS | 1 | 0.048 | 0.048 |
| | | | INTERLAKE | 1 | 0.050 | 0.050 |
| 5 | 20 | W2 | VIKING | 1 | 0.975 | 0.975 |
| | | | MANNVILLE | 1 | 1.330 | 1.330 |
| | | | MIDALE | 1 | 0.810 | 0.810 |
| | | | FROBISHER-ALIDA | 1 | 0.640 | 0.640 |
| 6 | 20 | W2 | BIRDBEAR | 1 | 0.620 | 0.620 |
| 8 | 20 | W2 | BIRDBEAR | 1 | 0.082 | 0.082 |
| | | | INTERLAKE | 1 | 0.051 | 0.051 |
| | | | RED RIVER | 1 | 0.054 | 0.054 |
| 9 | 20 | W2 | BIRDBEAR | 1 | 0.135 | 0.135 |
| 12 | 20 | W2 | MANNVILLE | 1 | 0.240 | 0.240 |
| | | | BIRDBEAR | 1 | 0.178 | 0.178 |
| 13 | 20 | W2 | FROBISHER-ALIDA | 1 | 0.255 | 0.255 |
| | | | BIRDBEAR | 1 | 0.187 | 0.187 |
| | | | RED RIVER | 1 | 0.058 | 0.058 |
| 23 | 20 | W2 | INTERLAKE | 1 | 0.066 | 0.066 |
| | | | WINNIPEG | 1 | 0.086 | 0.086 |
| 40 | 20 | W2 | WINNIPEGOSIS | 1 | 0.093 | 0.093 |
| 41 | 20 | W2 | WINNIPEGOSIS | 1 | 0.300 | 0.300 |
| 2 | 21 | W2 | MIDALE | 1 | 0.210 | 0.210 |
| 3 | 21 | W2 | POPLAR | 1 | 0.484 | 0.484 |
| 4 | 21 | W2 | POPLAR | 1 | 0.950 | 0.950 |
| | | | RATCLIFFE | 1 | 0.650 | 0.650 |

## RESISTIVITY OF FORMATION WATERS @ 20°C

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 4 | 21 | W2 | MIDALE | 1 | 0.800 | 0.800 |
| | | | BIRDBEAR | 1 | 0.800 | 0.800 |
| | | | YEOMAN | 2 | 0.047 - 0.055 | 0.051 |
| 6 | 21 | W2 | RATCLIFFE | 1 | 0.674 | 0.674 |
| | | | MADISON (UNDIFF) | 1 | 0.600 | 0.600 |
| | | | BIRDBEAR | 1 | 0.274 | 0.274 |
| 7 | 21 | W2 | RATCLIFFE | 1 | 1.040 | 1.040 |
| | | | MIDALE | 1 | 0.750 | 0.750 |
| | | | BIRDBEAR | 1 | 0.560 | 0.560 |
| | | | DUPEROW | 1 | 0.120 | 0.120 |
| | | | INTERLAKE | 1 | 0.048 | 0.048 |
| | | | RED RIVER | 1 | 0.050 | 0.050 |
| | | | WINNIPEG | 1 | 0.048 | 0.048 |
| 8 | 21 | W2 | VIKING | 1 | 0.960 | 0.960 |
| | | | MANNVILLE | 1 | 1.010 | 1.010 |
| | | | LOWER SHAUNAVON | 1 | 0.690 | 0.690 |
| | | | MADISON (UNDIFF) | 1 | 0.950 | 0.950 |
| | | | BIRDBEAR | 1 | 0.530 | 0.530 |
| | | | DUPEROW | 1 | 0.310 | 0.310 |
| | | | WINNIPEGOSIS | 1 | 0.052 | 0.052 |
| | | | INTERLAKE | 1 | 0.048 | 0.048 |
| | | | STONEWALL | 1 | 0.074 | 0.074 |
| | | | RED RIVER | 2 | 0.046 - 0.047 | 0.047 |
| 10 | 21 | W2 | GRAVELBOURG | 1 | 0.730 | 0.730 |
| | | | BIRDBEAR | 1 | 0.440 | 0.440 |
| 11 | 21 | W2 | MANNVILLE | 1 | 0.480 | 0.480 |
| | | | INTERLAKE | 1 | 0.060 | 0.060 |
| 12 | 21 | W2 | MADISON (UNDIFF) | 1 | 0.225 | 0.225 |
| | | | BIRDBEAR | 1 | 0.060 | 0.060 |
| | | | INTERLAKE | 2 | 0.048 - 0.059 | 0.054 |
| | | | WINNIPEG | 1 | 0.053 | 0.053 |
| 14 | 21 | W2 | BIRDBEAR | 1 | 0.124 | 0.124 |
| | | | RED RIVER | 1 | 0.050 | 0.050 |
| | | | WINNIPEG | 1 | 0.053 | 0.053 |
| | | | DEADWOOD | 1 | 0.049 | 0.049 |
| 26 | 21 | W2 | DUPEROW | 1 | 0.079 | 0.079 |
| 29 | 21 | W2 | SOURIS RIVER | 1 | 0.056 | 0.056 |
| | | | INTERLAKE | 1 | 0.063 | 0.063 |
| | | | WINNIPEG | 1 | 0.062 | 0.062 |
| 43 | 21 | W2 | STONEWALL-STONY MOUNTAIN | 1 | 0.203 | 0.203 |
| 3 | 22 | W2 | VIKING | 1 | 1.080 | 1.080 |
| | | | MADISON (UNDIFF) | 2 | 0.550 - 0.590 | 0.570 |
| | | | POPLAR | 1 | 1.620 | 1.620 |
| | | | RATCLIFFE | 2 | 0.485 - 0.900 | 0.693 |
| | | | BIRDBEAR | 1 | 0.160 | 0.160 |
| 4 | 22 | W2 | RATCLIFFE | 1 | 0.720 | 0.720 |
| | | | BIRDBEAR | 1 | 0.190 | 0.190 |
| 6 | 22 | W2 | BIRDBEAR | 1 | 0.156 | 0.156 |
| | | | DUPEROW | 1 | 0.150 | 0.150 |
| 8 | 22 | W2 | RED RIVER | 1 | 0.050 | 0.050 |
| 9 | 22 | W2 | JURASSIC | 1 | 0.730 | 0.730 |
| | | | MADISON (UNDIFF) | 1 | 1.120 | 1.120 |
| | | | DUPEROW | 1 | 0.175 | 0.175 |
| | | | WINNIPEGOSIS | 1 | 0.058 | 0.058 |
| | | | INTERLAKE | 1 | 0.066 | 0.066 |
| 17 | 22 | W2 | MANNVILLE | 1 | 0.295 | 0.295 |
| | | | MADISON (UNDIFF) | 1 | 0.247 | 0.247 |
| | | | DEVONIAN | 6 | 0.080 - 0.128 | 0.118 |
| | | | BIRDBEAR | 1 | 0.115 | 0.115 |
| | | | INTERLAKE | 1 | 0.083 | 0.083 |
| 28 | 22 | W2 | WINNIPEG | 2 | 0.059 - 0.072 | 0.066 |
| 40 | 22 | W2 | MANNVILLE | 1 | 0.251 | 0.251 |
| 42 | 22 | W2 | ASHERN | 1 | 0.071 | 0.071 |
| 47 | 22 | W2 | WINNIPEGOSIS | 1 | 0.850 | 0.850 |
| 1 | 23 | W2 | BIRDBEAR | 1 | 0.160 | 0.160 |
| | | | DUPEROW | 1 | 0.073 | 0.073 |
| | | | INTERLAKE | 1 | 0.071 | 0.071 |
| | | | YEOMAN | 1 | 0.061 | 0.061 |
| 2 | 23 | W2 | MADISON (UNDIFF) | 1 | 0.900 | 0.900 |
| | | | POPLAR | 1 | 1.700 | 1.700 |
| | | | BIRDBEAR | 1 | 0.190 | 0.190 |
| 3 | 23 | W2 | MANNVILLE | 1 | 1.750 | 1.750 |
| | | | MADISON (UNDIFF) | 1 | 0.460 | 0.460 |
| | | | POPLAR | 1 | 1.140 | 1.140 |
| | | | RATCLIFFE | 1 | 0.680 | 0.680 |
| 5 | 23 | W2 | RATCLIFFE | 1 | 0.139 | 0.139 |
| | | | BIRDBEAR | 1 | 0.198 | 0.198 |
| | | | RED RIVER | 1 | 0.064 | 0.064 |
| | | | YEOMAN | 1 | 0.048 | 0.048 |
| | | | WINNIPEG | 1 | 0.048 | 0.048 |
| 6 | 23 | W2 | BIRDBEAR | 1 | 0.445 | 0.445 |
| 9 | 23 | W2 | GRAVELBOURG | 1 | 1.040 | 1.040 |
| 12 | 23 | W2 | DUPEROW | 1 | 0.340 | 0.340 |
| 14 | 23 | W2 | BIRDBEAR | 1 | 0.153 | 0.153 |
| | | | DUPEROW | 3 | 0.144 - 0.158 | 0.149 |
| | | | PRAIRIE EVAPORITE | 1 | 0.156 | 0.156 |
| | | | ASHERN | 1 | 0.137 | 0.137 |
| | | | INTERLAKE | 1 | 0.151 | 0.151 |
| | | | WINNIPEG | 1 | 0.074 | 0.074 |
| 18 | 23 | W2 | BIRDBEAR | 1 | 0.260 | 0.260 |
| | | | DUPEROW | 2 | 0.245 - 0.274 | 0.260 |
| | | | SOURIS RIVER | 1 | 0.250 | 0.250 |
| | | | DAWSON BAY | 2 | 0.038 - 0.039 | 0.039 |
| | | | MIDDLE INTERLAKE | 1 | 0.062 | 0.062 |
| | | | LOWER INTERLAKE | 1 | 0.049 | 0.049 |
| 36 | 23 | W2 | WINNIPEGOSIS | 1 | 0.058 | 0.058 |
| 50 | 23 | W2 | WINNIPEGOSIS | 1 | 1.350 | 1.350 |
| | | | WINNIPEG | 1 | 0.420 | 0.420 |
| 3 | 24 | W2 | MADISON (UNDIFF) | 1 | 0.180 | 0.180 |
| | | | DUPEROW | 1 | 0.072 | 0.072 |
| | | | WINNIPEGOSIS | 1 | 0.064 | 0.064 |
| | | | INTERLAKE | 1 | 0.052 | 0.052 |
| | | | STONEWALL | 1 | 0.055 | 0.055 |
| | | | RED RIVER | 2 | 0.050 - 0.052 | 0.051 |
| | | | WINNIPEG | 1 | 0.050 | 0.050 |
| 6 | 24 | W2 | MADISON (UNDIFF) | 1 | 1.600 | 1.600 |
| 7 | 24 | W2 | RATCLIFFE | 1 | 0.930 | 0.930 |
| 10 | 24 | W2 | DUPEROW | 1 | 0.360 | 0.360 |
| 12 | 24 | W2 | LOWER SHAUNAVON-GRAVELBOURG | 1 | 1.860 | 1.860 |
| | | | MADISON (UNDIFF) | 1 | 2.050 | 2.050 |
| | | | BIRDBEAR | 1 | 1.170 | 1.170 |
| | | | DUPEROW | 1 | 0.780 | 0.780 |
| 14 | 24 | W2 | MANNVILLE | 1 | 0.760 | 0.760 |
| | | | DUPEROW | 1 | 0.170 | 0.170 |

## RESISTIVITY OF FORMATION WATERS @ 20°C

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 14 | 24 | W2 | DAWSON BAY | 1 | 0.150 | 0.150 |
| | | | WINNIPEGOSIS | 1 | 0.150 | 0.150 |
| | | | INTERLAKE | 4 | 0.085 - 0.131 | 0.109 |
| 16 | 24 | W2 | MADISON (UNDIFF) | 1 | 0.920 | 0.920 |
| 18 | 24 | W2 | BIRDBEAR | 1 | 0.044 | 0.044 |
| | | | WINNIPEGOSIS | 1 | 0.043 | 0.043 |
| 61 | 24 | W2 | WINNIPEG | 1 | 6.290 | 6.290 |
| 1 | 25 | W2 | POPLAR | 1 | 0.083 | 0.083 |
| | | | BIRDBEAR | 1 | 0.170 | 0.170 |
| 3 | 25 | W2 | MADISON (UNDIFF) | 2 | 0.290 - 0.380 | 0.335 |
| | | | BAKKEN | 1 | 0.051 | 0.051 |
| | | | BIRDBEAR | 1 | 0.472 | 0.472 |
| | | | DUPEROW | 2 | 0.107 - 0.115 | 0.111 |
| | | | INTERLAKE | 1 | 0.062 | 0.062 |
| 5 | 25 | W2 | GRAVELBOURG | 1 | 0.640 | 0.640 |
| | | | MADISON (UNDIFF) | 1 | 0.860 | 0.860 |
| | | | BAKKEN | 3 | 0.053 - 0.070 | 0.062 |
| | | | BIRDBEAR | 1 | 0.200 | 0.200 |
| 6 | 25 | W2 | RATCLIFFE | 1 | 1.040 | 1.040 |
| 10 | 25 | W2 | MADISON (UNDIFF) | 4 | 1.820 - 2.330 | 2.038 |
| | | | BIRDBEAR | 1 | 1.500 | 1.500 |
| | | | DUPEROW | 1 | 1.330 | 1.330 |
| 15 | 25 | W2 | DUPEROW | 1 | 0.315 | 0.315 |
| 20 | 25 | W2 | BIRDBEAR | 1 | 0.650 | 0.650 |
| | | | DUPEROW | 1 | 0.033 | 0.033 |
| 24 | 25 | W2 | UPPER SHAUNAVON | 1 | 0.083 | 0.083 |
| | | | BIRDBEAR | 1 | 0.078 | 0.078 |
| | | | DUPEROW | 1 | 0.136 | 0.136 |
| 27 | 25 | W2 | MANNVILLE | 1 | 0.142 | 0.142 |
| | | | WINNIPEGOSIS | 1 | 0.048 | 0.048 |
| | | | INTERLAKE | 2 | 0.065 | 0.065 |
| | | | WINNIPEG | 1 | 0.064 | 0.064 |
| 33 | 25 | W2 | JURASSIC | 1 | 0.056 | 0.056 |
| 36 | 25 | W2 | INTERLAKE | 1 | 0.058 | 0.058 |
| 54 | 25 | W2 | WINNIPEGOSIS | 1 | 1.300 | 1.300 |
| 55 | 25 | W2 | WINNIPEGOSIS | 5 | 2.171 - 2.447 | 2.303 |
| | | | INTERLAKE | 1 | 1.020 | 1.020 |
| | | | WINNIPEG | 1 | 0.845 | 0.845 |
| 4 | 26 | W2 | RATCLIFFE | 2 | 1.960 - 2.320 | 2.140 |
| | | | BAKKEN | 1 | 0.870 | 0.870 |
| 7 | 26 | W2 | MADISON (UNDIFF) | 2 | 1.980 - 2.420 | 2.200 |
| | | | BIRDBEAR | 1 | 0.680 | 0.680 |
| 8 | 26 | W2 | MADISON (UNDIFF) | 1 | 2.400 | 2.400 |
| | | | BIRDBEAR | 1 | 2.500 | 2.500 |
| 10 | 26 | W2 | MADISON (UNDIFF) | 1 | 2.370 | 2.370 |
| | | | SOURIS VALLEY | 1 | 1.990 | 1.990 |
| | | | BIRDBEAR | 1 | 1.970 | 1.970 |
| | | | DUPEROW | 1 | 6.030 | 6.030 |
| | | | WINNIPEGOSIS | 1 | 0.410 | 0.410 |
| | | | INTERLAKE | 1 | 0.180 | 0.180 |
| | | | RED RIVER | 1 | 0.079 | 0.079 |
| | | | WINNIPEG | 1 | 0.065 | 0.065 |
| | | | DEADWOOD | 1 | 0.066 | 0.066 |
| 12 | 26 | W2 | BIRDBEAR | 1 | 1.150 | 1.150 |
| | | | SOURIS RIVER | 1 | 0.262 | 0.262 |
| | | | RED RIVER | 1 | 0.073 | 0.073 |
| 12 | 26 | W2 | WINNIPEG | 1 | 0.053 | 0.053 |
| 15 | 26 | W2 | STONEWALL | 1 | 0.054 | 0.054 |
| 1 | 27 | W2 | MIDALE | 1 | 1.350 | 1.350 |
| | | | BIRDBEAR | 1 | 0.650 | 0.650 |
| | | | DAWSON BAY | 1 | 0.112 | 0.112 |
| | | | INTERLAKE | 2 | 0.089 - 0.100 | 0.095 |
| | | | RED RIVER | 1 | 0.121 | 0.121 |
| | | | WINNIPEG | 1 | 0.083 | 0.083 |
| 5 | 27 | W2 | RATCLIFFE | 1 | 2.300 | 2.300 |
| | | | BAKKEN | 1 | 0.400 | 0.400 |
| 7 | 27 | W2 | WINNIPEGOSIS | 1 | 0.256 | 0.256 |
| | | | RED RIVER | 1 | 0.252 | 0.252 |
| 12 | 27 | W2 | BIRDBEAR-DUPEROW | 1 | 3.000 | 3.000 |
| | | | STONEWALL | 1 | 0.475 | 0.475 |
| | | | WINNIPEG | 1 | 0.058 | 0.058 |
| 19 | 27 | W2 | DAWSON BAY | 1 | 0.048 | 0.048 |
| | | | WINNIPEG | 1 | 0.046 | 0.046 |
| 20 | 27 | W2 | WINNIPEG | 1 | 0.060 | 0.060 |
| 39 | 27 | W2 | WINNIPEGOSIS | 1 | 0.067 | 0.067 |
| 56 | 27 | W2 | WINNIPEG | 1 | 1.095 | 1.095 |
| 1 | 28 | W2 | POPLAR | 1 | 2.310 | 2.310 |
| | | | RATCLIFFE | 1 | 2.010 | 2.010 |
| | | | SOURIS VALLEY | 1 | 1.510 | 1.510 |
| | | | BIRDBEAR | 1 | 0.740 | 0.740 |
| 3 | 28 | W2 | MIDALE | 1 | 1.420 | 1.420 |
| | | | BIRDBEAR | 1 | 0.660 | 0.660 |
| | | | DUPEROW | 2 | 0.470 - 2.350 | 1.410 |
| | | | INTERLAKE | 1 | 0.130 | 0.130 |
| | | | YEOMAN | 1 | 0.145 | 0.145 |
| 4 | 28 | W2 | RATCLIFFE | 1 | 3.000 | 3.000 |
| | | | BIRDBEAR | 1 | 3.530 | 3.530 |
| 5 | 28 | W2 | MADISON (UNDIFF) | 2 | 2.550 - 2.950 | 2.750 |
| | | | DUPEROW | 2 | 1.800 - 2.950 | 2.375 |
| 8 | 28 | W2 | COLORADO | 1 | 1.410 | 1.410 |
| | | | GRAVELBOURG | 1 | 1.080 | 1.080 |
| | | | MADISON (UNDIFF) | 1 | 2.080 | 2.080 |
| 14 | 28 | W2 | MADISON (UNDIFF) | 1 | 2.150 | 2.150 |
| 26 | 28 | W2 | BIRDBEAR | 1 | 0.300 | 0.300 |
| | | | DUPEROW | 1 | 0.158 | 0.158 |
| 27 | 28 | W2 | MANNVILLE | 1 | 0.177 | 0.177 |
| | | | WINNIPEGOSIS | 1 | 0.053 | 0.053 |
| | | | INTERLAKE | 1 | 0.052 | 0.052 |
| | | | YEOMAN-WINNIPEG | 1 | 0.050 | 0.050 |
| 32 | 28 | W2 | MANNVILLE | 2 | 0.250 - 0.305 | 0.278 |
| 38 | 28 | W2 | MANNVILLE | 1 | 0.132 | 0.132 |
| | | | WINNIPEGOSIS | 1 | 0.051 | 0.051 |
| 2 | 29 | W2 | MADISON (UNDIFF) | 2 | 2.590 - 2.730 | 2.660 |
| | | | DUPEROW | 2 | 1.600 - 2.880 | 2.240 |
| | | | SOURIS RIVER | 2 | 1.320 - 1.350 | 1.335 |
| | | | ASHERN | 1 | 0.640 | 0.640 |
| | | | INTERLAKE | 2 | 0.740 - 2.900 | 1.820 |
| 7 | 29 | W2 | MANNVILLE | 1 | 2.150 | 2.150 |
| | | | RATCLIFFE | 1 | 2.050 | 2.050 |
| 11 | 29 | W2 | BELLY RIVER | 1 | 1.330 | 1.330 |
| | | | MANNVILLE | 2 | 0.880 - 1.610 | 1.245 |

## RESISTIVITY OF FORMATION WATERS @ 20°C

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 11 | 29 | W2 | MADISON (UNDIFF) | 1 | 2.760 | 2.760 |
| 12 | 29 | W2 | MANNVILLE | 1 | 0.910 | 0.910 |
| | | | VANGUARD | 1 | 0.580 | 0.580 |
| 17 | 29 | W2 | INTERLAKE | 1 | 0.160 | 0.160 |
| 32 | 29 | W2 | MANNVILLE | 1 | 0.215 | 0.215 |
| | | | THREE FORKS | 1 | 0.123 | 0.123 |
| 5 | 30 | W2 | INTERLAKE | 1 | 1.200 | 1.200 |
| 2 | 1 | W3 | ROSERAY | 1 | 2.140 | 2.140 |
| | | | MADISON (UNDIFF) | 1 | 3.740 | 3.740 |
| 9 | 1 | W3 | MANNVILLE | 1 | 2.120 | 2.120 |
| | | | ROSERAY | 1 | 1.430 | 1.430 |
| | | | MADISON (UNDIFF) | 1 | 2.130 | 2.130 |
| | | | BIRDBEAR | 1 | 1.380 | 1.380 |
| 11 | 1 | W3 | MANNVILLE | 1 | 1.280 | 1.280 |
| | | | ROSERAY | 1 | 1.180 | 1.180 |
| 17 | 1 | W3 | ROSERAY | 1 | 0.500 | 0.500 |
| 19 | 1 | W3 | WINNIPEGOSIS | 1 | 0.280 | 0.280 |
| | | | DEADWOOD | 1 | 0.069 | 0.069 |
| 20 | 1 | W3 | ROSERAY | 1 | 0.525 | 0.525 |
| 23 | 1 | W3 | WINNIPEGOSIS | 1 | 0.070 | 0.070 |
| | | | WINNIPEG | 1 | 0.086 | 0.086 |
| 25 | 1 | W3 | DUPEROW | 1 | 0.340 | 0.340 |
| 33 | 1 | W3 | ASHERN | 1 | 0.056 | 0.056 |
| | | | DEADWOOD | 1 | 0.062 | 0.062 |
| 34 | 1 | W3 | INTERLAKE | 1 | 0.079 | 0.079 |
| 37 | 1 | W3 | WINNIPEGOSIS | 1 | 0.053 | 0.053 |
| | | | INTERLAKE | 1 | 0.049 | 0.049 |
| | | | WINNIPEG | 1 | 0.047 | 0.047 |
| 38 | 1 | W3 | WINNIPEGOSIS-ASHERN-WINNIPEG | 1 | 0.065 | 0.065 |
| | | | INTERLAKE | 1 | 0.055 | 0.055 |
| 46 | 1 | W3 | STONEWALL-STONY MOUNTAIN | 1 | 0.220 | 0.220 |
| 5 | 2 | W3 | ROSERAY | 1 | 2.390 | 2.390 |
| | | | MADISON (UNDIFF) | 2 | 2.900 - 3.000 | 2.950 |
| | | | DUPEROW | 1 | 3.300 | 3.300 |
| 21 | 2 | W3 | ROSERAY | 1 | 0.930 | 0.930 |
| | | | GRAVELBOURG | 1 | 0.534 | 0.534 |
| | | | DAWSON BAY | 1 | 0.340 | 0.340 |
| | | | INTERLAKE | 1 | 0.073 | 0.073 |
| 51 | 2 | W3 | DAWSON BAY | 1 | 0.930 | 0.930 |
| | | | WINNIPEGOSIS | 1 | 0.730 | 0.730 |
| | | | INTERLAKE | 1 | 0.590 | 0.590 |
| | | | RED RIVER | 1 | 0.300 | 0.300 |
| 52 | 2 | W3 | DAWSON BAY | 1 | 0.860 | 0.860 |
| | | | WINNIPEGOSIS | 1 | 1.240 | 1.240 |
| | | | INTERLAKE | 1 | 1.260 | 1.260 |
| | | | WINNIPEG | 1 | 0.390 | 0.390 |
| 64 | 2 | W3 | SOURIS RIVER | 1 | 9.270 | 9.270 |
| | | | DEADWOOD | 1 | 1.780 | 1.780 |
| 2 | 3 | W3 | RATCLIFFE-MIDALE | 1 | 2.230 | 2.230 |
| | | | BIRDBEAR | 1 | 2.200 | 2.200 |
| | | | DUPEROW | 1 | 3.110 | 3.110 |
| 2 | 3 | W3 | WINNIPEGOSIS-INTERLAKE | 1 | 2.210 | 2.210 |
| | | | INTERLAKE | 1 | 1.800 | 1.800 |
| | | | STONEWALL-STONY MOUNTAIN | 1 | 2.000 | 2.000 |
| | | | STONY MOUNTAIN | 1 | 2.090 | 2.090 |
| | | | WINNIPEG | 1 | 2.290 | 2.290 |
| 3 | 3 | W3 | MADISON (UNDIFF) | 2 | 2.450 - 2.600 | 2.525 |
| | | | DAWSON BAY | 1 | 2.040 | 2.040 |
| 4 | 3 | W3 | MANNVILLE | 1 | 2.490 | 2.490 |
| | | | DUPEROW | 1 | 3.240 | 3.240 |
| 8 | 3 | W3 | UPPER VANGUARD | 1 | 2.310 | 2.310 |
| | | | MADISON (UNDIFF) | 1 | 3.020 | 3.020 |
| | | | BIRDBEAR | 1 | 2.710 | 2.710 |
| 13 | 3 | W3 | MANNVILLE | 1 | 1.500 | 1.500 |
| | | | ROSERAY | 1 | 1.300 | 1.300 |
| | | | MADISON (UNDIFF) | 1 | 1.140 | 1.140 |
| 15 | 3 | W3 | MADISON (UNDIFF) | 1 | 3.170 | 3.170 |
| 17 | 3 | W3 | MADISON (UNDIFF) | 1 | 1.940 | 1.940 |
| 20 | 3 | W3 | BIRDBEAR | 1 | 1.130 | 1.130 |
| 21 | 3 | W3 | MANNVILLE | 1 | 1.000 | 1.000 |
| | | | ROSERAY | 1 | 1.150 | 1.150 |
| 34 | 3 | W3 | PRAIRIE EVAPORITE-WINNIPEGOSIS | 1 | 0.077 | 0.077 |
| | | | INTERLAKE | 1 | 0.063 | 0.063 |
| 6 | 4 | W3 | BIRDBEAR | 1 | 1.560 | 1.560 |
| | | | DUPEROW | 1 | 1.650 | 1.650 |
| | | | SOURIS RIVER | 1 | 0.300 | 0.300 |
| | | | INTERLAKE | 1 | 2.750 | 2.750 |
| | | | WINNIPEG | 1 | 2.140 | 2.140 |
| 8 | 4 | W3 | SOURIS RIVER | 2 | 0.860 - 1.350 | 1.105 |
| 9 | 4 | W3 | MADISON (UNDIFF) | 1 | 2.200 | 2.200 |
| | | | BIRDBEAR | 2 | 2.220 - 2.350 | 2.285 |
| | | | DUPEROW | 2 | 1.050 - 1.720 | 1.385 |
| | | | WINNIPEG | 1 | 2.450 | 2.450 |
| 10 | 4 | W3 | ROSERAY | 1 | 1.490 | 1.490 |
| | | | MADISON (UNDIFF) | 1 | 2.200 | 2.200 |
| | | | BIRDBEAR | 1 | 2.700 | 2.700 |
| | | | DUPEROW | 1 | 2.710 | 2.710 |
| | | | INTERLAKE | 1 | 2.910 | 2.910 |
| | | | RED RIVER | 1 | 1.740 | 1.740 |
| | | | WINNIPEG | 1 | 3.020 | 3.020 |
| 17 | 4 | W3 | MANNVILLE | 1 | 1.300 | 1.300 |
| | | | MADISON (UNDIFF) | 1 | 2.000 | 2.000 |
| 26 | 4 | W3 | LOWER SHAUNAVON | 1 | 0.650 | 0.650 |
| | | | GRAVELBOURG | 1 | 0.650 | 0.650 |
| | | | MADISON (UNDIFF) | 1 | 0.390 | 0.390 |
| | | | BIRDBEAR | 1 | 0.460 | 0.460 |
| | | | DUPEROW | 3 | 0.248 - 0.390 | 0.299 |
| | | | SOURIS RIVER | 1 | 0.154 | 0.154 |
| | | | DAWSON BAY | 1 | 0.106 | 0.106 |
| | | | WINNIPEGOSIS | 1 | 0.083 | 0.083 |
| | | | INTERLAKE | 1 | 0.101 | 0.101 |
| 39 | 4 | W3 | DAWSON BAY | 1 | 0.053 | 0.053 |
| | | | ASHERN | 1 | 0.055 | 0.055 |
| 47 | 4 | W3 | STONEWALL-STONY MOUNTAIN | 1 | 0.147 | 0.147 |
| 26 | 5 | W3 | SOURIS VALLEY | 1 | 0.450 | 0.450 |
| | | | BIRDBEAR | 1 | 0.720 | 0.720 |

# RESISTIVITY OF FORMATION WATERS @ 20°C

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 26 | 5 | W3 | DUPEROW | 1 | 0.372 | 0.372 |
| | | | DAWSON BAY | 1 | 0.120 | 0.120 |
| 29 | 5 | W3 | DUPEROW | 2 | 0.320 | 0.320 |
| | | | WINNIPEGOSIS | 1 | 0.102 | 0.102 |
| | | | STONEWALL-STONY MOUNTAIN | 1 | 0.085 | 0.085 |
| 48 | 5 | W3 | SOURIS RIVER | 1 | 0.224 | 0.224 |
| 63 | 5 | W3 | SOURIS RIVER | 1 | 10.000 | 10.000 |
| | | | DAWSON BAY | 1 | 7.550 | 7.550 |
| 1 | 6 | W3 | MANNVILLE | 1 | 3.260 | 3.260 |
| 3 | 6 | W3 | MADISON (UNDIFF) | 1 | 2.820 | 2.820 |
| | | | BIRDBEAR | 1 | 2.800 | 2.800 |
| | | | WINNIPEGOSIS | 1 | 2.700 | 2.700 |
| | | | INTERLAKE | 1 | 2.900 | 2.900 |
| 9 | 6 | W3 | MANNVILLE | 2 | 2.170 - 2.400 | 2.285 |
| 10 | 6 | W3 | MADISON (UNDIFF) | 1 | 2.520 | 2.520 |
| 15 | 6 | W3 | SOURIS RIVER | 1 | 1.520 | 1.520 |
| | | | WINNIPEGOSIS | 1 | 0.410 | 0.410 |
| | | | INTERLAKE | 1 | 0.960 | 0.960 |
| | | | RED RIVER | 1 | 0.112 | 0.112 |
| | | | DEADWOOD | 2 | 0.063 - 0.108 | 0.088 |
| 16 | 6 | W3 | ROSERAY | 1 | 0.117 | 0.117 |
| 19 | 6 | W3 | BELLY RIVER | 3 | 0.755 - 0.975 | 0.895 |
| | | | MANNVILLE | 1 | 3.800 | 3.800 |
| | | | ROSERAY | 1 | 1.780 | 1.780 |
| | | | LOWER SHAUNAVON | 1 | 1.400 | 1.400 |
| 20 | 6 | W3 | MANNVILLE | 2 | 1.162 - 1.218 | 1.190 |
| 23 | 6 | W3 | BIRDBEAR | 1 | 1.380 | 1.380 |
| | | | DUPEROW | 2 | 0.140 - 0.330 | 0.235 |
| | | | INTERLAKE | 1 | 2.700 | 2.700 |
| 37 | 6 | W3 | WINNIPEGOSIS | 1 | 0.055 | 0.055 |
| | | | INTERLAKE | 1 | 0.066 | 0.066 |
| 2 | 7 | W3 | MADISON (UNDIFF) | 1 | 1.800 | 1.800 |
| 9 | 7 | W3 | ROSERAY | 1 | 1.900 | 1.900 |
| 16 | 7 | W3 | CANTUAR | 1 | 1.260 | 1.260 |
| | | | MADISON (UNDIFF) | 1 | 1.580 | 1.580 |
| | | | BIRDBEAR | 1 | 1.240 | 1.240 |
| 19 | 7 | W3 | MANNVILLE | 1 | 3.220 | 3.220 |
| 30 | 7 | W3 | MANNVILLE | 1 | 1.110 | 1.110 |
| | | | INTERLAKE | 1 | 0.054 | 0.054 |
| 34 | 7 | W3 | WINNIPEGOSIS | 1 | 0.075 | 0.075 |
| 35 | 7 | W3 | DUPEROW | 2 | 0.133 - 0.205 | 0.169 |
| 5 | 8 | W3 | ASHERN-INTERLAKE | 1 | 3.080 | 3.080 |
| | | | WINNIPEG | 1 | 2.870 | 2.870 |
| | | | DEADWOOD | 1 | 0.084 | 0.084 |
| 6 | 8 | W3 | MANNVILLE | 1 | 1.850 | 1.850 |
| | | | CANTUAR | 1 | 2.000 | 2.000 |
| | | | MADISON (UNDIFF) | 1 | 2.570 | 2.570 |
| 7 | 8 | W3 | MANNVILLE | 1 | 1.680 | 1.680 |
| | | | GRAVELBOURG | 1 | 0.970 | 0.970 |
| 8 | 8 | W3 | LOWER COLORADO | 1 | 1.680 | 1.680 |
| | | | VIKING | 1 | 0.720 | 0.720 |
| | | | ROSERAY | 1 | 1.540 | 1.540 |
| 10 | 8 | W3 | ROSERAY | 1 | 1.540 | 1.540 |
| | | | BIRDBEAR | 1 | 2.450 | 2.450 |
| 11 | 8 | W3 | GRAVELBOURG | 1 | 1.410 | 1.410 |
| 14 | 8 | W3 | ROSERAY | 1 | 0.120 | 0.120 |
| 17 | 8 | W3 | MANNVILLE | 1 | 1.620 | 1.620 |
| | | | SOURIS RIVER | 2 | 0.579 - 1.280 | 0.930 |
| 19 | 8 | W3 | BASAL MANNVILLE | 1 | 1.430 | 1.430 |
| 31 | 8 | W3 | BIRDBEAR | 1 | 0.200 | 0.200 |
| | | | DUPEROW | 1 | 0.236 | 0.236 |
| | | | STONEWALL | 1 | 0.068 | 0.068 |
| | | | RED RIVER | 1 | 0.048 | 0.048 |
| 32 | 8 | W3 | BIRDBEAR | 1 | 0.150 | 0.150 |
| | | | INTERLAKE | 1 | 0.071 | 0.071 |
| 35 | 8 | W3 | STONY MOUNTAIN | 1 | 0.056 | 0.056 |
| | | | DEADWOOD | 4 | 0.045 - 0.050 | 0.048 |
| 63 | 8 | W3 | MANNVILLE | 1 | 8.600 | 8.600 |
| | | | DEADWOOD | 1 | 2.080 | 2.080 |
| 1 | 9 | W3 | BASAL CANTUAR | 1 | 1.700 | 1.700 |
| | | | UPPER ROSERAY | 1 | 1.580 | 1.580 |
| | | | ROSERAY | 2 | 2.390 - 2.800 | 2.595 |
| 3 | 9 | W3 | MANNVILLE | 1 | 1.480 | 1.480 |
| | | | MADISON (UNDIFF) | 1 | 3.360 | 3.360 |
| 4 | 9 | W3 | MANNVILLE | 1 | 1.850 | 1.850 |
| | | | MADISON (UNDIFF) | 2 | 2.520 - 2.740 | 2.630 |
| 6 | 9 | W3 | MADISON (UNDIFF) | 1 | 2.390 | 2.390 |
| | | | DUPEROW | 1 | 1.600 | 1.600 |
| 7 | 9 | W3 | VIKING | 1 | 0.937 | 0.937 |
| | | | MANNVILLE | 1 | 1.485 | 1.485 |
| | | | ROSERAY | 1 | 1.370 | 1.370 |
| | | | GRAVELBOURG | 1 | 0.242 | 0.242 |
| | | | MADISON (UNDIFF) | 1 | 2.376 | 2.376 |
| 8 | 9 | W3 | LOWER SHAUNAVON | 1 | 1.500 | 1.500 |
| 15 | 9 | W3 | CANTUAR | 1 | 1.520 | 1.520 |
| 4 | 10 | W3 | UPPER GRAVELBOURG | 1 | 1.600 | 1.600 |
| 9 | 10 | W3 | MANNVILLE | 1 | 1.700 | 1.700 |
| | | | CANTUAR | 1 | 1.500 | 1.500 |
| | | | ROSERAY | 1 | 1.400 | 1.400 |
| | | | GRAVELBOURG | 1 | 1.200 | 1.200 |
| 14 | 10 | W3 | MANNVILLE | 1 | 2.070 | 2.070 |
| | | | DUPEROW | 1 | 2.300 | 2.300 |
| | | | DEADWOOD | 1 | 1.350 | 1.350 |
| 15 | 10 | W3 | CANTUAR | 1 | 1.580 | 1.580 |
| 19 | 10 | W3 | CANTUAR | 1 | 1.460 | 1.460 |
| 20 | 10 | W3 | GRAVELBOURG | 1 | 1.620 | 1.620 |
| | | | BIRDBEAR | 1 | 0.930 | 0.930 |
| 22 | 10 | W3 | MANNVILLE | 1 | 1.150 | 1.150 |
| | | | GRAVELBOURG | 1 | 1.180 | 1.180 |
| | | | BIRDBEAR | 1 | 1.430 | 1.430 |
| 24 | 10 | W3 | SOURIS VALLEY | 1 | 0.450 | 0.450 |
| | | | DUPEROW | 2 | 0.450 - 0.750 | 0.600 |
| | | | DAWSON BAY | 1 | 0.122 | 0.122 |

RESISTIVITY OF FORMATION WATERS @ 20°C

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 24 | 10 | W3 | PRAIRIE EVAPORITE-WINNIPEGOSIS | 1 | 0.094 | 0.094 |
| | | | INTERLAKE | 2 | 0.080 - 0.085 | 0.083 |
| | | | STONEWALL | 1 | 0.080 | 0.080 |
| | | | RED RIVER | 1 | 0.055 | 0.055 |
| 27 | 10 | W3 | MANNVILLE | 2 | 1.240 - 1.280 | 1.260 |
| | | | BAKKEN | 1 | 0.970 | 0.970 |
| | | | BIRDBEAR | 1 | 0.277 | 0.277 |
| 60 | 10 | W3 | DEVONIAN | 1 | 7.480 | 7.480 |
| | | | WINNIPEGOSIS | 1 | 5.900 | 5.900 |
| 2 | 11 | W3 | BIRDBEAR | 1 | 2.720 | 2.720 |
| | | | SOURIS RIVER | 1 | 3.340 | 3.340 |
| 7 | 11 | W3 | MADISON (UNDIFF) | 1 | 4.100 | 4.100 |
| 12 | 11 | W3 | VIKING | 1 | 0.620 | 0.620 |
| 16 | 11 | W3 | CANTUAR | 1 | 1.580 | 1.580 |
| 18 | 11 | W3 | CANTUAR | 3 | 1.740 - 2.160 | 1.890 |
| 19 | 11 | W3 | BASAL MANNVILLE | 1 | 1.320 | 1.320 |
| | | | MADISON (UNDIFF) | 1 | 1.450 | 1.450 |
| 21 | 11 | W3 | DUPEROW | 1 | 0.136 | 0.136 |
| | | | WINNIPEGOSIS | 1 | 0.062 | 0.062 |
| 23 | 11 | W3 | DUPEROW | 1 | 0.970 | 0.970 |
| | | | DAWSON BAY | 1 | 0.064 | 0.064 |
| | | | INTERLAKE | 1 | 0.067 | 0.067 |
| 27 | 11 | W3 | DUPEROW | 2 | 0.132 - 0.140 | 0.136 |
| | | | SOURIS RIVER | 1 | 0.110 | 0.110 |
| | | | INTERLAKE | 1 | 0.089 | 0.089 |
| 29 | 11 | W3 | MANNVILLE | 1 | 1.480 | 1.480 |
| 30 | 11 | W3 | MANNVILLE | 1 | 0.830 | 0.830 |
| 60 | 11 | W3 | DAWSON BAY | 1 | 4.330 | 4.330 |
| | | | WINNIPEGOSIS | 1 | 2.240 | 2.240 |
| 1 | 12 | W3 | WINNIPEGOSIS-ASHERN-INTERLAKE | 1 | 3.080 | 3.080 |
| 5 | 12 | W3 | MANNVILLE | 1 | 1.750 | 1.750 |
| | | | ROSERAY | 1 | 2.150 | 2.150 |
| 13 | 12 | W3 | MADISON (UNDIFF) | 1 | 2.250 | 2.250 |
| | | | BIRDBEAR | 1 | 0.690 | 0.690 |
| | | | DUPEROW | 1 | 1.080 | 1.080 |
| | | | SOURIS RIVER-DAWSON BAY-WINNIPEGOSIS | 1 | 2.170 | 2.170 |
| 16 | 12 | W3 | CANTUAR | 2 | 1.950 - 2.050 | 2.000 |
| 18 | 12 | W3 | CANTUAR | 1 | 1.200 | 1.200 |
| | | | ROSERAY | 1 | 1.500 | 1.500 |
| 30 | 12 | W3 | MANNVILLE | 1 | 0.930 | 0.930 |
| | | | BIRDBEAR | 1 | 0.950 | 0.950 |
| 37 | 12 | W3 | MANNVILLE | 1 | 0.105 | 0.105 |
| 58 | 12 | W3 | SOURIS RIVER | 1 | 0.203 | 0.203 |
| 60 | 12 | W3 | SOURIS RIVER | 1 | 1.270 | 1.270 |
| | | | WINNIPEGOSIS | 1 | 1.880 | 1.880 |
| 1 | 13 | W3 | MADISON (UNDIFF) | 1 | 1.540 | 1.540 |
| | | | BIRDBEAR | 1 | 2.370 | 2.370 |
| | | | INTERLAKE | 1 | 3.510 | 3.510 |
| 2 | 13 | W3 | VIKING | 1 | 1.750 | 1.750 |
| | | | MANNVILLE | 1 | 2.850 | 2.850 |
| 11 | 13 | W3 | CANTUAR | 1 | 1.100 | 1.100 |
| 13 | 13 | W3 | ROSERAY | 1 | 0.845 | 0.845 |
| 14 | 13 | W3 | ROSERAY | 1 | 1.170 | 1.170 |
| 15 | 13 | W3 | CANTUAR | 1 | 1.020 | 1.020 |
| 17 | 13 | W3 | MANNVILLE | 1 | 1.710 | 1.710 |
| | | | CANTUAR | 1 | 1.350 | 1.350 |
| | | | ROSERAY | 1 | 1.440 | 1.440 |
| 18 | 13 | W3 | CANTUAR | 1 | 1.230 | 1.230 |
| 19 | 13 | W3 | VIKING | 1 | 0.635 | 0.635 |
| | | | MANNVILLE | 2 | 1.450 - 1.580 | 1.515 |
| | | | CANTUAR | 1 | 1.100 | 1.100 |
| 25 | 13 | W3 | VIKING | 1 | 0.850 | 0.850 |
| | | | MANNVILLE | 1 | 1.500 | 1.500 |
| 27 | 13 | W3 | MANNVILLE | 3 | 0.300 - 1.850 | 1.177 |
| | | | WINNIPEGOSIS | 1 | 0.059 | 0.059 |
| 29 | 13 | W3 | BAKKEN | 1 | 0.970 | 0.970 |
| 39 | 13 | W3 | MANNVILLE | 1 | 0.111 | 0.111 |
| 46 | 13 | W3 | VIKING | 1 | 0.150 | 0.150 |
| | | | DUPEROW-SOURIS RIVER | 1 | 0.108 | 0.108 |
| | | | SOURIS RIVER | 1 | 0.098 | 0.098 |
| | | | DAWSON BAY | 1 | 0.060 | 0.060 |
| 47 | 13 | W3 | DAWSON BAY | 1 | 0.074 | 0.074 |
| 66 | 13 | W3 | WINNIPEGOSIS | 1 | 0.104 | 0.104 |
| | | | DEADWOOD | 1 | 0.335 | 0.335 |
| 1 | 14 | W3 | MANNVILLE | 1 | 1.100 | 1.100 |
| | | | MADISON (UNDIFF) | 1 | 2.780 | 2.780 |
| 4 | 14 | W3 | BASAL MANNVILLE | 1 | 1.260 | 1.260 |
| | | | ROSERAY | 2 | 1.200 | 1.200 |
| 5 | 14 | W3 | ROSERAY | 1 | 2.340 | 2.340 |
| 11 | 14 | W3 | CANTUAR | 2 | 0.826 - 0.910 | 0.868 |
| | | | ROSERAY | 1 | 1.320 | 1.320 |
| 13 | 14 | W3 | CANTUAR | 1 | 0.900 | 0.900 |
| 14 | 14 | W3 | CANTUAR | 1 | 0.960 | 0.960 |
| | | | ROSERAY | 1 | 0.950 | 0.950 |
| 17 | 14 | W3 | CANTUAR | 2 | 1.390 - 1.400 | 1.395 |
| | | | ROSERAY | 3 | 1.240 - 1.880 | 1.490 |
| | | | BIRDBEAR | 1 | 0.430 | 0.430 |
| | | | DUPEROW | 3 | 0.380 - 0.440 | 0.418 |
| | | | SOURIS RIVER | 3 | 0.099 - 0.223 | 0.174 |
| | | | INTERLAKE | 2 | 0.084 - 0.170 | 0.127 |
| | | | DEADWOOD | 3 | 0.110 - 0.143 | 0.124 |
| 18 | 14 | W3 | ROSERAY | 2 | 1.280 - 1.570 | 1.425 |
| 19 | 14 | W3 | VIKING | 1 | 0.570 | 0.570 |
| | | | SPINNEY HILL | 1 | 1.350 | 1.350 |
| | | | MANNVILLE | 1 | 1.400 | 1.400 |
| | | | CANTUAR | 1 | 1.060 | 1.060 |
| 20 | 14 | W3 | VIKING | 1 | 0.700 | 0.700 |
| 21 | 14 | W3 | VIKING | 2 | 0.660 - 0.700 | 0.680 |

## RESISTIVITY OF FORMATION WATERS @ 20°C

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 22 | 14 | W3 | VIKING | 1 | 0.670 | 0.670 |
| 23 | 14 | W3 | VIKING | 1 | 1.100 | 1.100 |
| 26 | 14 | W3 | SPINNEY HILL | 1 | 1.280 | 1.280 |
| 29 | 14 | W3 | DUPEROW | 1 | 0.163 | 0.163 |
| 35 | 14 | W3 | MANNVILLE | 1 | 0.150 | 0.150 |
| 46 | 14 | W3 | DAWSON BAY | 1 | 0.061 | 0.061 |
| 56 | 14 | W3 | WINNIPEGOSIS | 1 | 0.370 | 0.370 |
| | | | DEADWOOD | 2 | 0.380 - 0.390 | 0.385 |
| 58 | 14 | W3 | WINNIPEGOSIS | 1 | 0.258 | 0.258 |
| 63 | 14 | W3 | WINNIPEGOSIS | 1 | 0.590 | 0.590 |
| 12 | 15 | W3 | ROSERAY | 1 | 0.830 | 0.830 |
| 15 | 15 | W3 | CANTUAR | 1 | 0.840 | 0.840 |
| | | | ROSERAY | 3 | 0.910 - 0.980 | 0.950 |
| 16 | 15 | W3 | CANTUAR | 4 | 0.960 - 1.070 | 1.008 |
| | | | ROSERAY | 2 | 0.670 - 0.835 | 0.753 |
| 17 | 15 | W3 | MANNVILLE | 3 | 1.100 - 1.720 | 1.307 |
| | | | CANTUAR | 4 | 1.040 - 2.000 | 1.535 |
| | | | ROSERAY | 3 | 1.780 - 2.230 | 1.953 |
| | | | UPPER SHAUNAVON | 1 | 1.740 | 1.740 |
| | | | LOWER SHAUNAVON | 3 | 1.250 - 1.600 | 1.380 |
| | | | MADISON (UNDIFF) | 2 | 1.070 - 1.650 | 1.360 |
| 18 | 15 | W3 | CANTUAR | 1 | 2.050 | 2.050 |
| 23 | 15 | W3 | VIKING | 1 | 0.620 | 0.620 |
| 33 | 15 | W3 | INTERLAKE | 1 | 0.057 | 0.057 |
| 34 | 15 | W3 | MANNVILLE | 1 | 0.160 | 0.160 |
| | | | BIRDBEAR | 1 | 0.099 | 0.099 |
| 51 | 15 | W3 | WINNIPEGOSIS | 1 | 0.096 | 0.096 |
| 60 | 15 | W3 | MANNVILLE | 1 | 5.800 | 5.800 |
| | | | DEADWOOD | 1 | 0.300 | 0.300 |
| 61 | 15 | W3 | WINNIPEGOSIS | 1 | 0.480 | 0.480 |
| | | | DEADWOOD | 1 | 0.420 | 0.420 |
| 64 | 15 | W3 | DEADWOOD | 1 | 0.510 | 0.510 |
| 68 | 15 | W3 | WINNIPEGOSIS | 1 | 0.350 - 0.359 | 0.359 |
| | | | WINNIPEGOSIS-ASHERN | 1 | 0.284 | 0.284 |
| | | | MEADOW LAKE | 2 | 0.427 - 0.481 | 0.454 |
| 1 | 16 | W3 | UPPER SHAUNAVON | 1 | 0.755 | 0.755 |
| 13 | 16 | W3 | CANTUAR | 1 | 0.770 | 0.770 |
| | | | BASAL MANNVILLE | 1 | 0.690 | 0.690 |
| | | | ROSERAY | 1 | 0.700 | 0.700 |
| 14 | 16 | W3 | ROSERAY | 1 | 0.667 | 0.667 |
| | | | LOWER ROSERAY | 1 | 0.698 | 0.698 |
| 15 | 16 | W3 | CANTUAR | 2 | 0.720 - 0.900 | 0.810 |
| | | | ROSERAY | 4 | 0.780 - 1.630 | 1.135 |
| 16 | 16 | W3 | MANNVILLE | 5 | 0.880 - 1.830 | 1.146 |
| | | | CANTUAR | 2 | 0.935 - 0.960 | 0.948 |
| | | | BASAL CANTUAR | 1 | 1.280 | 1.280 |
| | | | BASAL CANTUAR-ROSERAY | 1 | 0.960 | 0.960 |
| | | | ROSERAY | 11 | 0.745 - 1.400 | 0.989 |
| | | | LOWER SHAUNAVON | 4 | 0.662 - 1.500 | 1.146 |
| 17 | 16 | W3 | ROSERAY | 8 | 0.550 - 1.280 | 1.031 |
| | | | BIRDBEAR | 1 | 0.820 | 0.820 |
| | | | DUPEROW | 3 | 0.076 - 0.500 | 0.225 |
| | | | INTERLAKE | 1 | 0.059 | 0.059 |
| 18 | 16 | W3 | MANNVILLE | 1 | 0.710 | 0.710 |
| | | | UPPER SHAUNAVON | 1 | 1.380 | 1.380 |
| 19 | 16 | W3 | UPPER SHAUNAVON | 1 | 1.220 | 1.220 |
| | | | LOWER SHAUNAVON | 1 | 1.210 | 1.210 |
| 23 | 16 | W3 | LOWER COLORADO | 1 | 0.580 | 0.580 |
| | | | VIKING | 1 | 0.480 | 0.480 |
| 24 | 16 | W3 | VIKING | 2 | 0.740 | 0.740 |
| 26 | 16 | W3 | SPINNEY HILL | 1 | 1.200 | 1.200 |
| 32 | 16 | W3 | BIRDBEAR | 1 | 0.095 | 0.095 |
| 33 | 16 | W3 | MANNVILLE | 1 | 0.160 | 0.160 |
| | | | BIRDBEAR | 1 | 0.117 | 0.117 |
| 34 | 16 | W3 | MANNVILLE | 4 | 0.124 - 0.165 | 0.140 |
| | | | BAKKEN | 1 | 0.128 | 0.128 |
| | | | BIRDBEAR | 3 | 0.124 - 0.155 | 0.136 |
| 38 | 16 | W3 | MANNVILLE | 2 | 0.145 - 0.148 | 0.147 |
| 45 | 16 | W3 | WINNIPEGOSIS | 1 | 0.048 | 0.048 |
| 59 | 16 | W3 | MANNVILLE | 2 | 1.520 - 1.970 | 1.745 |
| | | | DAWSON BAY | 1 | 0.590 | 0.590 |
| | | | WINNIPEGOSIS | 1 | 0.380 | 0.380 |
| | | | DEADWOOD | 1 | 0.310 | 0.310 |
| 66 | 16 | W3 | MEADOW LAKE | 1 | 0.212 | 0.212 |
| 2 | 17 | W3 | UPPER SHAUNAVON | 1 | 0.395 | 0.395 |
| | | | MADISON (UNDIFF) | 1 | 1.700 | 1.700 |
| 3 | 17 | W3 | BELLY RIVER | 1 | 5.320 | 5.320 |
| 6 | 17 | W3 | DAWSON BAY | 1 | 1.400 | 1.400 |
| 8 | 17 | W3 | CANTUAR | 1 | 0.650 | 0.650 |
| 9 | 17 | W3 | MADISON (UNDIFF) | 1 | 1.850 | 1.850 |
| 10 | 17 | W3 | BASAL MANNVILLE | 1 | 0.540 | 0.540 |
| | | | UPPER SHAUNAVON | 1 | 0.562 | 0.562 |
| 11 | 17 | W3 | UPPER SHAUNAVON | 4 | 0.587 - 0.810 | 0.697 |
| 12 | 17 | W3 | BELLY RIVER | 2 | 3.240 - 3.500 | 3.370 |
| | | | UPPER SHAUNAVON | 2 | 0.650 - 0.690 | 0.670 |
| 13 | 17 | W3 | ROSERAY | 2 | 0.700 - 0.800 | 0.750 |
| 14 | 17 | W3 | ROSERAY | 1 | 0.680 | 0.680 |
| 15 | 17 | W3 | MANNVILLE | 1 | 0.913 | 0.913 |
| | | | CANTUAR | 9 | 0.530 - 0.730 | 0.637 |
| | | | BASAL CANTUAR | 1 | 0.661 | 0.661 |
| | | | CANTUAR-ROSERAY | 1 | 0.570 | 0.570 |
| | | | UPPER ROSERAY | 1 | 0.902 | 0.902 |
| | | | ROSERAY | 3 | 0.610 - 1.000 | 0.756 |
| 16 | 17 | W3 | CANTUAR | 2 | 0.820 - 0.880 | 0.850 |
| | | | ROSERAY | 3 | 0.735 - 0.880 | 0.798 |
| | | | LOWER ROSERAY | 2 | 0.880 - 0.900 | 0.890 |
| | | | UPPER SHAUNAVON | 1 | 0.860 | 0.860 |
| | | | MADISON (UNDIFF) | 1 | 1.420 | 1.420 |
| | | | DUPEROW | 3 | 0.062 - 0.700 | 0.313 |
| | | | SOURIS RIVER | 1 | 0.192 | 0.192 |
| | | | WINNIPEGOSIS | 1 | 0.067 | 0.067 |

## RESISTIVITY OF FORMATION WATERS @ 20°C

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 16 | 17 | W3 | INTERLAKE | 2 | 0.069 - 0.071 | 0.070 |
| 17 | 17 | W3 | CANTUAR | 4 | 0.850 - 1.120 | 0.985 |
| | | | ROSERAY | 1 | 1.410 | 1.410 |
| | | | UPPER SHAUNAVON | 1 | 1.280 | 1.280 |
| 18 | 17 | W3 | BELLY RIVER | 2 | 2.600 - 6.500 | 4.550 |
| | | | CANTUAR | 2 | 1.050 - 1.370 | 1.210 |
| | | | ROSERAY | 28 | 0.610 - 2.700 | 1.274 |
| | | | UPPER SHAUNAVON | 5 | 1.060 - 1.764 | 1.415 |
| | | | UPPER-LOWER SHAUNAVON | 1 | 1.360 | 1.360 |
| 19 | 17 | W3 | CANTUAR | 5 | 0.835 - 1.180 | 0.953 |
| | | | ROSERAY | 1 | 0.860 | 0.860 |
| | | | UPPER SHAUNAVON | 3 | 1.040 - 1.640 | 1.280 |
| 20 | 17 | W3 | CANTUAR | 1 | 0.780 | 0.780 |
| 22 | 17 | W3 | VIKING | 1 | 0.610 | 0.610 |
| 23 | 17 | W3 | VIKING | 2 | 0.490 - 0.590 | 0.540 |
| 24 | 17 | W3 | VIKING | 3 | 0.490 - 0.660 | 0.572 |
| 25 | 17 | W3 | VIKING | 2 | 0.760 - 0.880 | 0.820 |
| | | | MANNVILLE | 1 | 0.760 | 0.760 |
| 26 | 17 | W3 | MADISON (UNDIFF) | 1 | 0.400 | 0.400 |
| | | | WINNIPEGOSIS | 1 | 0.049 | 0.049 |
| | | | ASHERN | 1 | 0.047 | 0.047 |
| 27 | 17 | W3 | VIKING | 1 | 0.853 | 0.853 |
| 28 | 17 | W3 | VIKING | 1 | 1.110 | 1.110 |
| 31 | 17 | W3 | MANNVILLE | 1 | 0.203 | 0.203 |
| 46 | 17 | W3 | MANNVILLE | 1 | 0.355 | 0.355 |
| 47 | 17 | W3 | SPINNEY HILL | 1 | 0.230 | 0.230 |
| 56 | 17 | W3 | DEADWOOD | 2 | 0.151 - 0.152 | 0.152 |
| 58 | 17 | W3 | MEADOW LAKE | 1 | 0.440 | 0.440 |
| 9 | 18 | W3 | RAVENSCRAG | 1 | 7.900 | 7.900 |
| | | | BELLY RIVER | 1 | 4.280 | 4.280 |
| | | | UPPER SHAUNAVON | 3 | 0.440 - 1.130 | 0.790 |
| 10 | 18 | W3 | UPPER SHAUNAVON | 1 | 1.300 | 1.300 |
| | | | LOWER SHAUNAVON | 2 | 0.415 - 0.620 | 0.518 |
| 11 | 18 | W3 | BASAL MANNVILLE | 1 | 0.540 | 0.540 |
| | | | UPPER SHAUNAVON | 2 | 0.460 - 0.490 | 0.475 |
| 12 | 18 | W3 | ROSERAY | 1 | 0.680 | 0.680 |
| | | | UPPER SHAUNAVON | 13 | 0.523 - 1.630 | 1.060 |
| 13 | 18 | W3 | ROSERAY | 3 | 0.520 - 0.810 | 0.673 |
| | | | UPPER SHAUNAVON | 2 | 0.920 - 1.130 | 1.025 |
| 14 | 18 | W3 | ROSERAY | 3 | 0.750 - 0.940 | 0.813 |
| | | | BIRDBEAR | 1 | 0.550 | 0.550 |
| | | | DUPEROW | 3 | 0.108 - 0.540 | 0.264 |
| 15 | 18 | W3 | MANNVILLE | 1 | 0.710 | 0.710 |
| | | | CANTUAR | 1 | 0.660 | 0.660 |
| | | | CANTUAR-ROSERAY | 1 | 0.750 | 0.750 |
| | | | ROSERAY | 6 | 0.580 - 0.840 | 0.727 |
| | | | UPPER SHAUNAVON | 4 | 0.715 - 0.850 | 0.794 |
| 16 | 18 | W3 | MANNVILLE | 1 | 0.760 | 0.760 |
| | | | CANTUAR | 6 | 0.560 - 0.870 | 0.653 |
| | | | BASAL CANTUAR | 1 | 0.500 | 0.500 |
| | | | ROSERAY | 9 | 0.500 - 0.900 | 0.734 |
| 17 | 18 | W3 | BELLY RIVER | 1 | 2.050 | 2.050 |
| | | | MANNVILLE | 4 | 0.660 - 1.150 | 0.820 |
| | | | CANTUAR | 2 | 0.785 - 0.920 | 0.853 |
| | | | ROSERAY | 11 | 0.790 - 1.380 | 0.912 |
| | | | BIRDBEAR | 1 | 1.070 | 1.070 |
| | | | DUPEROW | 5 | 0.080 - 0.200 | 0.132 |
| | | | SOURIS RIVER | 2 | 0.080 - 0.090 | 0.085 |
| 18 | 18 | W3 | CANTUAR | 2 | 0.870 - 0.960 | 0.915 |
| | | | UPPER SHAUNAVON | 3 | 0.785 - 1.330 | 1.122 |
| | | | LOWER SHAUNAVON | 4 | 1.020 - 1.420 | 1.243 |
| 24 | 18 | W3 | VIKING | 2 | 0.500 - 0.590 | 0.545 |
| 25 | 18 | W3 | VIKING | 1 | 0.265 | 0.265 |
| 28 | 18 | W3 | MANNVILLE | 1 | 0.920 | 0.920 |
| | | | VIKING | 1 | 0.213 | 0.213 |
| 29 | 18 | W3 | STONY MOUNTAIN | 1 | 0.050 | 0.050 |
| 32 | 18 | W3 | MANNVILLE | 1 | 0.595 | 0.595 |
| | | | BAKKEN | 1 | 0.580 | 0.580 |
| 33 | 18 | W3 | MANNVILLE | 3 | 0.340 - 0.373 | 0.351 |
| 46 | 18 | W3 | MANNVILLE | 24 | 0.041 - 3.820 | 0.800 |
| 49 | 18 | W3 | SOURIS RIVER | 1 | 0.085 | 0.085 |
| 51 | 18 | W3 | DAWSON BAY | 1 | 0.072 | 0.072 |
| 55 | 18 | W3 | ST. WALBURG | 1 | 0.374 | 0.374 |
| 4 | 19 | W3 | BELLY RIVER | 1 | 2.300 | 2.300 |
| 7 | 19 | W3 | MANNVILLE | 1 | 0.670 | 0.670 |
| | | | UPPER SHAUNAVON | 2 | 0.345 - 0.410 | 0.378 |
| 8 | 19 | W3 | BELLY RIVER | 7 | 4.200 - 4.550 | 4.326 |
| | | | UPPER SHAUNAVON | 1 | 0.675 | 0.675 |
| | | | SHAUNAVON | 2 | 0.370 - 0.400 | 0.385 |
| | | | LOWER SHAUNAVON | 1 | 0.357 | 0.357 |
| 9 | 19 | W3 | BELLY RIVER | 1 | 4.450 | 4.450 |
| | | | SHAUNAVON | 1 | 0.430 | 0.430 |
| 10 | 19 | W3 | BELLY RIVER | 1 | 2.400 | 2.400 |
| | | | UPPER SHAUNAVON | 1 | 1.600 | 1.600 |
| 11 | 19 | W3 | BELLY RIVER | 1 | 3.300 | 3.300 |
| | | | UPPER SHAUNAVON | 3 | 0.420 - 0.510 | 0.463 |
| 12 | 19 | W3 | BASAL CANTUAR | 1 | 0.625 | 0.625 |
| | | | ROSERAY | 2 | 0.560 - 0.580 | 0.570 |
| | | | UPPER SHAUNAVON | 3 | 0.500 - 0.600 | 0.537 |
| 13 | 19 | W3 | BELLY RIVER | 2 | 2.260 - 2.730 | 2.495 |
| | | | MANNVILLE | 1 | 0.780 | 0.780 |
| | | | CANTUAR | 3 | 0.530 - 0.600 | 0.557 |
| | | | BASAL CANTUAR | 2 | 0.530 | 0.530 |
| | | | ROSERAY | 12 | 0.530 - 0.880 | 0.691 |
| | | | UPPER SHAUNAVON | 11 | 0.540 - 0.923 | 0.721 |
| | | | LOWER SHAUNAVON | 1 | 0.600 | 0.600 |
| | | | GRAVELBOURG | 2 | 0.690 - 0.796 | 0.743 |
| | | | MADISON (UNDIFF) | 1 | 1.470 | 1.470 |
| 14 | 19 | W3 | BELLY RIVER | 1 | 2.200 | 2.200 |
| | | | MANNVILLE | 2 | 0.610 | 0.610 |
| | | | CANTUAR | 1 | 0.460 | 0.460 |
| | | | BASAL CANTUAR | 1 | 0.581 | 0.581 |
| | | | ROSERAY | 7 | 0.412 - 0.800 | 0.654 |
| | | | UPPER SHAUNAVON | 7 | 0.505 - 1.080 | 0.728 |
| | | | GRAVELBOURG | 1 | 0.555 | 0.555 |
| | | | BIRDBEAR | 1 | 0.124 | 0.124 |
| | | | DUPEROW | 5 | 0.046 - 0.178 | 0.104 |

## RESISTIVITY OF FORMATION WATERS @ 20°C

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 15 | 19 | W3 | BELLY RIVER | 1 | 2.520 | 2.520 |
| | | | MANNVILLE | 1 | 0.670 | 0.670 |
| | | | BASAL MANNVILLE | 1 | 0.542 | 0.542 |
| | | | UPPER SHAUNAVON | 4 | 0.500 - 0.690 | 0.560 |
| | | | LOWER SHAUNAVON | 1 | 0.690 | 0.690 |
| 16 | 19 | W3 | MANNVILLE | 1 | 0.750 | 0.750 |
| | | | CANTUAR | 1 | 0.750 | 0.750 |
| | | | BASAL MANNVILLE | 2 | 0.450 - 0.550 | 0.500 |
| | | | ROSERAY | 8 | 0.420 - 0.880 | 0.674 |
| | | | UPPER SHAUNAVON | 4 | 0.590 - 0.900 | 0.761 |
| | | | LOWER SHAUNAVON | 1 | 1.200 | 1.200 |
| 17 | 19 | W3 | ROSERAY | 2 | 0.675 - 0.860 | 0.768 |
| | | | LOWER ROSERAY | 1 | 0.970 | 0.970 |
| | | | UPPER SHAUNAVON | 2 | 0.640 - 0.950 | 0.795 |
| 18 | 19 | W3 | BASAL MANNVILLE-UPPER SHAUNAVON | 1 | 0.950 | 0.950 |
| | | | UPPER SHAUNAVON | 2 | 0.690 - 0.830 | 0.760 |
| 21 | 19 | W3 | VIKING | 1 | 0.530 | 0.530 |
| 22 | 19 | W3 | BASAL CANTUAR | 1 | 0.582 | 0.582 |
| 25 | 19 | W3 | VIKING | 3 | 0.590 - 0.640 | 0.621 |
| 28 | 19 | W3 | VIKING | 1 | 0.825 | 0.825 |
| 29 | 19 | W3 | MANNVILLE | 1 | 1.110 | 1.110 |
| 31 | 19 | W3 | VIKING | 1 | 0.725 | 0.725 |
| | | | SPINNEY HILL | 1 | 0.740 | 0.740 |
| 32 | 19 | W3 | MANNVILLE | 5 | 0.445 - 0.777 | 0.574 |
| | | | THREE FORKS | 1 | 0.440 | 0.440 |
| 35 | 19 | W3 | MANNVILLE | 1 | 0.301 | 0.301 |
| 36 | 19 | W3 | DUPEROW | 4 | 0.242 - 0.814 | 0.598 |
| 37 | 19 | W3 | MANNVILLE | 11 | 0.276 - 0.822 | 0.407 |
| 38 | 19 | W3 | MANNVILLE | 1 | 0.300 | 0.300 |
| 39 | 19 | W3 | BASAL MANNVILLE | 2 | 0.240 - 0.242 | 0.241 |
| 40 | 19 | W3 | VIKING | 1 | 0.410 | 0.410 |
| | | | MANNVILLE | 4 | 0.267 - 0.335 | 0.295 |
| | | | UNITY | 1 | 0.340 | 0.340 |
| 45 | 19 | W3 | MANNVILLE | 26 | 0.109 - 0.200 | 0.129 |
| 48 | 19 | W3 | MANNVILLE | 36 | 0.012 - 2.150 | 0.472 |
| 58 | 19 | W3 | WINNIPEGOSIS | 1 | 0.252 | 0.252 |
| | | | DEADWOOD | 1 | 0.147 | 0.147 |
| 60 | 19 | W3 | MANNVILLE | 1 | 2.390 | 2.390 |
| 63 | 19 | W3 | WINNIPEGOSIS | 1 | 0.186 | 0.186 |
| 2 | 20 | W3 | UPPER SHAUNAVON | 1 | 1.020 | 1.020 |
| | | | MADISON (UNDIFF) | 1 | 0.709 | 0.709 |
| 3 | 20 | W3 | VIKING | 1 | 0.580 | 0.580 |
| | | | CANTUAR | 1 | 0.710 | 0.710 |
| | | | BASAL MANNVILLE | 1 | 0.720 | 0.720 |
| | | | UPPER SHAUNAVON | 1 | 0.494 | 0.494 |
| 4 | 20 | W3 | BELLY RIVER | 2 | 4.500 - 4.660 | 4.580 |
| | | | UPPER SHAUNAVON | 3 | 0.310 - 0.421 | 0.361 |
| 5 | 20 | W3 | BELLY RIVER | 3 | 1.840 - 2.400 | 2.057 |
| | | | UPPER SHAUNAVON | 5 | 0.280 - 0.390 | 0.338 |
| 6 | 20 | W3 | SHAUNAVON | 1 | 0.350 | 0.350 |

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 6 | 20 | W3 | GRAVELBOURG | 1 | 0.165 | 0.165 |
| 7 | 20 | W3 | BELLY RIVER | 2 | 2.050 - 2.200 | 2.125 |
| | | | VIKING | 2 | 0.600 - 0.610 | 0.605 |
| | | | MANNVILLE | 1 | 0.600 | 0.600 |
| | | | UPPER SHAUNAVON | 3 | 0.460 - 0.580 | 0.527 |
| | | | LOWER SHAUNAVON | 1 | 0.700 | 0.700 |
| 11 | 20 | W3 | UPPER SHAUNAVON | 1 | 0.560 | 0.560 |
| | | | LOWER SHAUNAVON | 1 | 0.420 | 0.420 |
| 12 | 20 | W3 | UPPER SHAUNAVON | 1 | 0.700 | 0.700 |
| 13 | 20 | W3 | CANTUAR | 1 | 0.570 | 0.570 |
| | | | UPPER SHAUNAVON | 4 | 0.440 - 0.800 | 0.557 |
| | | | MADISON (UNDIFF) | 1 | 0.480 | 0.480 |
| 14 | 20 | W3 | ROSERAY | 2 | 0.605 - 1.020 | 0.813 |
| | | | UPPER SHAUNAVON | 3 | 0.540 - 0.615 | 0.588 |
| 15 | 20 | W3 | UPPER SHAUNAVON | 2 | 0.720 - 0.780 | 0.750 |
| 16 | 20 | W3 | UPPER SHAUNAVON | 3 | 0.540 - 0.720 | 0.637 |
| 17 | 20 | W3 | ROSERAY | 1 | 0.558 | 0.558 |
| | | | UPPER SHAUNAVON | I | 0.790 | 0.790 |
| | | | UPPER-LOWER SHAUNAVON | 1 | 0.560 | 0.560 |
| 21 | 20 | W3 | VIKING | 1 | 0.490 | 0.490 |
| | | | SOURIS RIVER | 1 | 0.054 | 0.054 |
| 22 | 20 | W3 | MANNVILLE | 1 | 0.323 | 0.323 |
| 23 | 20 | W3 | VIKING | 1 | 0.494 | 0.494 |
| 28 | 20 | W3 | VIKING | 2 | 0.421 - 0.480 | 0.451 |
| 31 | 20 | W3 | BELLY RIVER | 1 | 3.640 | 3.640 |
| | | | MANNVILLE | 2 | 0.463 - 0.541 | 0.502 |
| 32 | 20 | W3 | MANNVILLE | 6 | 0.362 - 0.734 | 0.548 |
| | | | BAKKEN | 1 | 0.362 | 0.362 |
| 33 | 20 | W3 | MANNVILLE | 8 | 0.373 - 0.469 | 0.411 |
| 36 | 20 | W3 | DUPEROW | 1 | 0.140 | 0.140 |
| 37 | 20 | W3 | MANNVILLE | 1 | 0.305 | 0.305 |
| 38 | 20 | W3 | MANNVILLE | 2 | 0.453 - 0.480 | 0.467 |
| 39 | 20 | W3 | MANNVILLE | 5 | 0.329 - 0.765 | 0.450 |
| 40 | 20 | W3 | MANNVILLE | 1 | 0.318 | 0.318 |
| 41 | 20 | W3 | MANNVILLE | 3 | 0.085 - 0.530 | 0.310 |
| 43 | 20 | W3 | MANNVILLE | 2 | 0.083 - 0.120 | 0.102 |
| 44 | 20 | W3 | MANNVILLE | 2 | 0.118 - 0.420 | 0.269 |
| 48 | 20 | W3 | MANNVILLE | 21 | 0.121 - 0.300 | 0.173 |
| 49 | 20 | W3 | MANNVILLE | 6 | 0.122 - 0.203 | 0.151 |
| | | | DEADWOOD | 1 | 0.042 | 0.042 |
| 50 | 20 | W3 | MANNVILLE | 2 | 0.117 - 0.168 | 0.143 |
| | | | SOURIS RIVER | 1 | 0.085 | 0.085 |
| | | | DAWSON BAY | 1 | 0.056 | 0.056 |
| 51 | 20 | W3 | MANNVILLE | 4 | 0.161 - 0.165 | 0.163 |
| 54 | 20 | W3 | CUMMINGS | 1 | 1.180 | 1.180 |
| 57 | 20 | W3 | MANNVILLE | 1 | 3.320 | 3.320 |

# RESISTIVITY OF FORMATION WATERS @ 20°C

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 60 | 20 | W3 | SOURIS RIVER | 1 | 0.470 | 0.470 |
| | | | WINNIPEGOSIS | 1 | 0.170 | 0.170 |
| | | | DEADWOOD | 2 | 0.100 - 0.130 | 0.115 |
| 61 | 20 | W3 | MANNVILLE | 1 | 1.530 | 1.530 |
| | | | WINNIPEGOSIS | 1 | 0.123 | 0.123 |
| 62 | 20 | W3 | MANNVILLE | 1 | 1.620 | 1.620 |
| 1 | 21 | W3 | BELLY RIVER | 1 | 4.460 | 4.460 |
| 2 | 21 | W3 | UPPER SHAUNAVON | 1 | 0.720 | 0.720 |
| 3 | 21 | W3 | UPPER SHAUNAVON | 1 | 0.790 | 0.790 |
| | | | MADISON (UNDIFF) | 1 | 0.192 | 0.192 |
| 4 | 21 | W3 | UPPER SHAUNAVON | 1 | 0.570 | 0.570 |
| 7 | 21 | W3 | UPPER SHAUNAVON | 2 | 0.445 - 0.460 | 0.453 |
| 10 | 21 | W3 | UPPER SHAUNAVON | 1 | 0.515 | 0.515 |
| | | | UPPER-LOWER SHAUNAVON | 1 | 0.520 | 0.520 |
| 11 | 21 | W3 | UPPER SHUANAVON | 1 | 0.725 | 0.725 |
| 13 | 21 | W3 | VIKING | 1 | 0.495 | 0.495 |
| | | | UPPER SHAUNAVON | 1 | 0.520 | 0.520 |
| 14 | 21 | W3 | UPPER SHAUNAVON | 1 | 0.483 | 0.483 |
| 17 | 21 | W3 | UPPER-LOWER SHAUNAVON | 1 | 0.560 | 0.560 |
| 18 | 21 | W3 | GRAVELBOURG | 1 | 0.740 | 0.740 |
| | | | BIRDBEAR | 1 | 0.580 | 0.580 |
| 22 | 21 | W3 | VIKING | 2 | 0.495 - 0.560 | 0.528 |
| | | | MADISON (UNDIFF) | 1 | 0.503 | 0.503 |
| | | | BAKKEN | 1 | 0.485 | 0.485 |
| 26 | 21 | W3 | VIKING | 1 | 0.420 | 0.420 |
| 28 | 21 | W3 | VIKING | 1 | 0.357 | 0.357 |
| 32 | 21 | W3 | RIBSTONE CREEK | 1 | 1.370 | 1.370 |
| | | | MANNVILLE | 1 | 0.408 | 0.408 |
| 33 | 21 | W3 | MANNVILLE | 9 | 0.392 - 0.692 | 0.515 |
| 34 | 21 | W3 | MANNVILLE | 6 | 0.313 - 1.020 | 0.806 |
| | | | BIRDBEAR | 1 | 0.300 | 0.300 |
| 35 | 21 | W3 | MANNVILLE | 3 | 1.750 - 2.300 | 2.150 |
| | | | BIRDBEAR | 1 | 0.330 | 0.330 |
| | | | DUPEROW | 1 | 0.166 | 0.166 |
| 38 | 21 | W3 | MANNVILLE | 1 | 0.324 | 0.324 |
| 40 | 21 | W3 | MANNVILLE | 3 | 0.329 - 0.452 | 0.371 |
| 47 | 21 | W3 | MANNVILLE | 1 | 0.171 | 0.171 |
| 48 | 21 | W3 | MANNVILLE | 4 | 0.121 - 0.169 | 0.146 |
| 49 | 21 | W3 | MANNVILLE | 2 | 0.801 - 1.140 | 0.971 |
| 51 | 21 | W3 | SOURIS RIVER | 1 | 0.144 | 0.144 |
| | | | WINNIPEGOSIS | 1 | 0.057 | 0.057 |
| 52 | 21 | W3 | MANNVILLE | 3 | 0.187 - 0.194 | 0.191 |
| 55 | 21 | W3 | SOURIS RIVER | 1 | 0.185 | 0.185 |
| 56 | 21 | W3 | MANNVILLE | 1 | 1.120 | 1.120 |
| 57 | 21 | W3 | MEADOW LAKE | 1 | 0.130 | 0.130 |
| 58 | 21 | W3 | MANNVILLE | 1 | 1.300 | 1.300 |
| 61 | 21 | W3 | ST. WALBURG | 1 | 0.500 | 0.500 |
| 63 | 21 | W3 | WINNIPEGOSIS | 1 | 0.121 | 0.121 |
| 1 | 22 | W3 | UPPER SHAUNAVON | 1 | 0.605 | 0.605 |
| 2 | 22 | W3 | UPPER SHAUNAVON | 1 | 1.050 | 1.050 |
| 6 | 22 | W3 | SOURIS RIVER | 1 | 0.100 | 0.100 |
| | | | DAWSON BAY | 1 | 0.090 | 0.090 |
| | | | STONEWALL | 1 | 0.060 | 0.060 |
| | | | RED RIVER | 1 | 0.060 | 0.060 |
| | | | DEADWOOD | 1 | 1.300 | 1.300 |
| 7 | 22 | W3 | UPPER SHAUNAVON | 1 | 0.435 | 0.435 |
| 9 | 22 | W3 | LOWER SHAUNAVON | 1 | 1.080 | 1.080 |
| 10 | 22 | W3 | VIKING | 1 | 0.530 | 0.530 |
| | | | UPPER SHAUNAVON | 1 | 0.745 | 0.745 |
| 11 | 22 | W3 | UPPER-LOWER SHAUNAVON | 1 | 0.699 | 0.699 |
| 13 | 22 | W3 | UPPER SHAUNAVON | 2 | 0.510 - 0.570 | 0.540 |
| 14 | 22 | W3 | UPPER SHAUNAVON | 3 | 0.480 - 0.620 | 0.544 |
| 16 | 22 | W3 | MANNVILLE | 1 | 0.760 | 0.760 |
| 20 | 22 | W3 | VIKING | 1 | 0.590 | 0.590 |
| 22 | 22 | W3 | LOWER SHAUNAVON-GRAVELBOURG | 1 | 0.678 | 0.678 |
| 23 | 22 | W3 | VIKING | 1 | 0.460 | 0.460 |
| 24 | 22 | W3 | BAKKEN | 1 | 0.430 | 0.430 |
| 26 | 22 | W3 | VIKING | 1 | 0.440 | 0.440 |
| | | | MANNVILLE | 1 | 0.680 | 0.680 |
| 28 | 22 | W3 | VIKING | 1 | 0.395 | 0.395 |
| 30 | 22 | W3 | VIKING | 5 | 0.460 - 0.479 | 0.468 |
| 31 | 22 | W3 | RIBSTONE CREEK | 1 | 1.740 | 1.740 |
| 32 | 22 | W3 | SPINNEY HILL-MANNVILLE | 4 | 0.382 - 0.580 | 0.512 |
| | | | BAKKEN | 4 | 0.571 - 0.720 | 0.644 |
| 33 | 22 | W3 | MANNVILLE | 2 | 0.503 - 0.555 | 0.529 |
| | | | MANNVILLE | 1 | 0.495 | 0.495 |
| | | | DUPEROW | 1 | 0.220 | 0.220 |
| 34 | 22 | W3 | MANNVILLE | 1 | 0.353 | 0.353 |
| 39 | 22 | W3 | MANNVILLE | 2 | 0.317 - 0.703 | 0.510 |
| 43 | 22 | W3 | DUPEROW | 1 | 0.230 | 0.230 |
| | | | WINNIPEGOSIS | 1 | 0.055 | 0.055 |
| 44 | 22 | W3 | MANNVILLE | 1 | 0.120 | 0.120 |
| 45 | 22 | W3 | MANNVILLE | 11 | 0.103 - 0.714 | 0.288 |
| | | | WINNIPEGOSIS | 1 | 0.050 | 0.050 |
| 46 | 22 | W3 | MANNVILLE | 2 | 0.130 - 0.149 | 0.140 |
| 47 | 22 | W3 | MANNVILLE | 1 | 0.147 | 0.147 |
| 48 | 22 | W3 | MANNVILLE | 1 | 0.145 | 0.145 |

## RESISTIVITY OF FORMATION WATERS @ 20°C

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 51 | 22 | W3 | MANNVILLE | 1 | 0.162 | 0.162 |
| 60 | 22 | W3 | SOURIS RIVER | 1 | 0.395 | 0.395 |
| 62 | 22 | W3 | SOURIS RIVER | 1 | 0.530 | 0.530 |
| | | | WINNIPEGOSIS | 1 | 0.120 | 0.120 |
| | | | DEADWOOD | 1 | 0.086 | 0.086 |
| 65 | 22 | W3 | MANNVILLE | 1 | 4.300 | 4.300 |
| 5 | 23 | W3 | UPPER SHAUNAVON | 2 | 0.340 - 0.614 | 0.477 |
| | | | LOWER SHAUNAVON | 1 | 0.352 | 0.352 |
| 7 | 23 | W3 | UPPER SHAUNAVON | 1 | 0.801 | 0.801 |
| 9 | 23 | W3 | UPPER SHAUNAVON | 1 | 0.690 | 0.690 |
| 10 | 23 | W3 | UPPER SHAUNAVON | 1 | 0.700 | 0.700 |
| 12 | 23 | W3 | VIKING | 3 | 0.560 - 0.710 | 0.613 |
| | | | CANTUAR | 1 | 0.720 | 0.720 |
| | | | UPPER SHAUNAVON | 2 | 0.600 - 0.720 | 0.660 |
| 13 | 23 | W3 | UPPER SHAUNAVON | 2 | 0.590 - 0.710 | 0.650 |
| 14 | 23 | W3 | UPPER SHAUNAVON | 1 | 0.780 | 0.780 |
| 16 | 23 | W3 | MADISON (UNDIFF) | 1 | 0.780 | 0.780 |
| 17 | 23 | W3 | SHAUNAVON | 1 | 0.680 | 0.680 |
| | | | MADISON (UNDIFF) | 1 | 0.720 | 0.720 |
| 21 | 23 | W3 | VIKING | 1 | 0.680 | 0.680 |
| 26 | 23 | W3 | VIKING | 1 | 0.570 | 0.570 |
| 27 | 23 | W3 | VIKING | 2 | 0.358 - 0.580 | 0.469 |
| 29 | 23 | W3 | BELLY RIVER | 1 | 2.870 | 2.870 |
| 30 | 23 | W3 | BAKKEN | 1 | 0.480 | 0.480 |
| | | | BAKKEN- BIG VALLEY | 1 | 0.356 | 0.356 |
| | | | BIRDBEAR | 1 | 0.280 | 0.280 |
| 31 | 23 | W3 | BELLY RIVER | 1 | 5.377 | 5.377 |
| | | | VIKING | 1 | 0.480 | 0.480 |
| | | | BAKKEN | 2 | 0.377 - 0.444 | 0.411 |
| | | | BIRDBEAR | 1 | 0.370 | 0.370 |
| 32 | 23 | W3 | BIRDBEAR | 1 | 0.202 | 0.202 |
| 33 | 23 | W3 | MANNVILLE | 4 | 0.349 - 0.365 | 0.353 |
| 39 | 23 | W3 | MANNVILLE | 3 | 0.310 - 0.403 | 0.342 |
| 43 | 23 | W3 | DUPEROW | 1 | 0.205 | 0.205 |
| 44 | 23 | W3 | MCLAREN | 1 | 0.470 | 0.470 |
| 45 | 23 | W3 | WINNIPEGOSIS | 1 | 0.055 | 0.055 |
| 46 | 23 | W3 | MANNVILLE | 1 | 0.105 | 0.105 |
| 47 | 23 | W3 | MANNVILLE | 4 | 0.099 - 0.120 | 0.113 |
| 48 | 23 | W3 | MANNVILLE | 1 | 0.100 | 0.100 |
| 49 | 23 | W3 | MANNVILLE | 22 | 0.072 - 0.250 | 0.109 |
| 50 | 23 | W3 | MANNVILLE | 1 | 0.142 | 0.142 |
| 51 | 23 | W3 | MANNVILLE | 10 | 0.130 - 0.300 | 0.195 |
| 52 | 23 | W3 | MANNVILLE | 16 | 0.160 - 0.280 | 0.200 |
| 56 | 23 | W3 | SOURIS RIVER | 1 | 0.500 | 0.500 |
| 56 | 23 | W3 | WINNIPEGOSIS | 1 | 0.120 | 0.120 |
| | | | DEADWOOD | 1 | 0.068 | 0.068 |
| 58 | 23 | W3 | SPARKY | 1 | 1.110 | 1.110 |
| 59 | 23 | W3 | SOURIS RIVER | 1 | 0.725 | 0.725 |
| | | | WINNIPEGOSIS | 1 | 0.200 | 0.200 |
| 66 | 23 | W3 | SOURIS RIVER | 2 | 0.062 - 0.084 | 0.073 |
| | | | WINNIPEGOSIS | 1 | 0.065 | 0.065 |
| 1 | 24 | W3 | UPPER SHAUNAVON | 1 | 1.280 | 1.280 |
| | | | MADISON (UNDIFF) | 1 | 1.338 | 1.338 |
| 2 | 24 | W3 | VIKING | 1 | 0.720 | 0.720 |
| | | | MANNVILLE | 1 | 1.330 | 1.330 |
| | | | UPPER SHAUNAVON | 5 | 1.120 - 1.560 | 1.384 |
| | | | UPPER-LOWER SHAUNAVON | 1 | 2.130 | 2.130 |
| | | | MADISON (UNDIFF) | 1 | 1.430 | 1.430 |
| 4 | 24 | W3 | UPPER SHAUNAVON | 1 | 0.740 | 0.740 |
| 7 | 24 | W3 | UPPER-LOWER SHAUNAVON | 1 | 1.039 | 1.039 |
| 8 | 24 | W3 | UPPER-LOWER SHAUNAVON | 1 | 0.565 | 0.565 |
| 14 | 24 | W3 | UPPER SHAUNAVON | 1 | 0.840 | 0.840 |
| 15 | 24 | W3 | VIKING | 1 | 0.660 | 0.660 |
| | | | MANNVILLE | 1 | 0.880 | 0.880 |
| 20 | 24 | W3 | DUPEROW | 1 | 0.177 | 0.177 |
| 21 | 24 | W3 | VIKING | 1 | 0.699 | 0.699 |
| | | | UPPER-LOWER SHAUNAVON | 1 | 0.400 | 0.400 |
| | | | GRAVELBOURG | 2 | 0.350 - 0.811 | 0.581 |
| 23 | 24 | W3 | VIKING | 3 | 0.505 - 0.565 | 0.525 |
| 27 | 24 | W3 | MANNVILLE | 1 | 0.565 | 0.565 |
| 29 | 24 | W3 | VIKING | 1 | 0.370 | 0.370 |
| 30 | 24 | W3 | VIKING | 1 | 0.630 | 0.630 |
| 31 | 24 | W3 | BAKKEN | 4 | 0.361 - 0.843 | 0.516 |
| 32 | 24 | W3 | MANNVILLE | 1 | 0.320 | 0.320 |
| | | | BAKKEN | 6 | 0.287 - 0.721 | 0.439 |
| 33 | 24 | W3 | MANNVILLE | 1 | 0.370 | 0.370 |
| 34 | 24 | W3 | BIRDBEAR | 1 | 0.320 | 0.320 |
| 35 | 24 | W3 | TORQUAY | 3 | 0.301 - 0.494 | 0 368 |
| 39 | 24 | W3 | MANNVILLE | 1 | 0.202 | 0.202 |
| | | | BIRDBEAR | 1 | 0.385 | 0.385 |
| 41 | 24 | W3 | MANNVILLE | 2 | 0.229 - 0.274 | 0.252 |
| 44 | 24 | W3 | MANNVILLE | 3 | 0.140 - 0.239 | 0.176 |
| | | | WINNIPEGOSIS | 1 | 0.046 | 0.046 |
| 45 | 24 | W3 | MANNVILLE | 2 | 0.350 - 0.540 | 0.465 |
| 51 | 24 | W3 | DEADWOOD | 1 | 0.048 | 0.048 |
| 59 | 24 | W3 | MANNVILLE | 1 | 1.600 | 1.600 |
| 1 | 25 | W3 | BIRDBEAR | 1 | 1.120 | 1.120 |
| | | | DUPEROW | 2 | 1.140 - 1.530 | 1.335 |

# RESISTIVITY OF FORMATION WATERS @ 20°C

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 5 | 25 | W3 | DUPEROW | 1 | 0.940 | 0.940 |
| | | | SOURIS RIVER | 1 | 1.330 | 1.330 |
| 6 | 25 | W3 | UPPER SHAUNAVON | 1 | 1.100 | 1.100 |
| 8 | 25 | W3 | UPPER-LOWER SHAUNAVON | 1 | 0.796 | 0.796 |
| 9 | 25 | W3 | UPPER SHAUNAVON | 1 | 0.910 | 0.910 |
| 12 | 25 | W3 | UPPER SHAUNAVON | 1 | 0.940 | 0.940 |
| | | | LOWER SHAUNAVON | 1 | 0.920 | 0.920 |
| 13 | 25 | W3 | VIKING | 1 | 0.980 | 0.980 |
| | | | ROSERAY | 1 | 0.970 | 0.970 |
| | | | LOWER SHAUNAVON | 1 | 1.440 | 1.440 |
| | | | MADISON (UNDIFF) | 1 | 0.700 | 0.700 |
| 22 | 25 | W3 | DUPEROW | 1 | 0.050 | 0.050 |
| 24 | 25 | W3 | VIKING | 5 | 0.510 - 0.768 | 0.622 |
| 25 | 25 | W3 | BAKKEN | 1 | 0.610 | 0.610 |
| 27 | 25 | W3 | VIKING | 1 | 0.400 | 0.400 |
| | | | BIRDBEAR | 1 | 0.230 | 0.230 |
| 29 | 25 | W3 | BIRDBEAR | 1 | 0.462 | 0.462 |
| 30 | 25 | W3 | BELLY RIVER | 1 | 2.710 | 2.710 |
| 31 | 25 | W3 | LEA PARK | 2 | 3.800 - 3.920 | 3.860 |
| | | | VIKING | 7 | 0.500 - 0.600 | 0.524 |
| | | | BAKKEN | 2 | 0.420 - 0.510 | 0.465 |
| 32 | 25 | W3 | BAKKEN | 2 | 0.550 - 0.792 | 0.671 |
| 33 | 25 | W3 | BAKKEN | 2 | 0.484 - 0.540 | 0.512 |
| 35 | 25 | W3 | MANNVILLE | 3 | 0.348 - 0.599 | 0.432 |
| 36 | 25 | W3 | BAKKEN | 6 | 0.168 - 0.432 | 0.365 |
| 38 | 25 | W3 | MANNVILLE | 2 | 0.365 - 0.376 | 0.371 |
| 39 | 25 | W3 | MANNVILLE | 4 | 0.127 - 0.682 | 0.317 |
| 42 | 25 | W3 | MANNVILLE | 5 | 0.130 - 0.229 | 0.186 |
| 43 | 25 | W3 | MANNVILLE | 2 | 0.488 - 1.000 | 0.744 |
| 45 | 25 | W3 | MANNVILLE | 2 | 0.297 - 0.300 | 0.299 |
| 46 | 25 | W3 | MANNVILLE | 2 | 0.097 - 0.200 | 0.149 |
| 48 | 25 | W3 | SPARKY | 1 | 0.092 | 0.092 |
| 52 | 25 | W3 | MANNVILLE | 3 | 0.178 - 0.328 | 0.252 |
| 53 | 25 | W3 | ST. WALBURG | 1 | 0.172 | 0.172 |
| | | | MANNVILLE | 2 | 0.160 - 0.212 | 0.186 |
| 54 | 25 | W3 | MANNVILLE | 2 | 0.288 - 0.294 | 0.291 |
| 62 | 25 | W3 | SOURIS RIVER | 1 | 0.740 | 0.740 |
| | | | WINNIPEGOSIS | 1 | 0.060 | 0.060 |
| 63 | 25 | W3 | MANNVILLE | 1 | 1.220 | 1.220 |
| 64 | 25 | W3 | MANNVILLE | 1 | 1.200 | 1.200 |
| 65 | 25 | W3 | MANNVILLE | 1 | 3.200 | 3.200 |
| 77 | 25 | W3 | DAWSON BAY | 1 | 0.153 | 0.153 |
| 3 | 26 | W3 | RIBSTONE CREEK | 1 | 1.240 | 1.240 |
| | | | UPPER SHAUNAVON | 1 | 1.030 | 1.030 |
| 3 | 26 | W3 | MADISON (UNDIFF) | 2 | 0.535 - 1.040 | 0.788 |
| 5 | 26 | W3 | UPPER SHAUNAVON | 1 | 0.935 | 0.935 |
| 8 | 26 | W3 | UPPER SHAUNAVON | 1 | 1.229 | 1.229 |
| | | | BIRDBEAR | 1 | 2.080 | 2.080 |
| | | | DUPEROW | 1 | 0.890 | 0.890 |
| 9 | 26 | W3 | VIKING | 1 | 0.930 | 0.930 |
| | | | UPPER SHAUNAVON | 1 | 1.330 | 1.330 |
| 10 | 26 | W3 | UPPER-LOWER SHAUNAVON | 1 | 1.210 | 1.210 |
| 11 | 26 | W3 | VIKING | 1 | 1.200 | 1.200 |
| | | | MADISON (UNDIFF) | 1 | 0.950 | 0.950 |
| 13 | 26 | W3 | UPPER SHAUNAVON | 1 | 1.150 | 1.150 |
| 17 | 26 | W3 | UPPER SHAUNAVON | 1 | 0.790 | 0.790 |
| | | | GRAVELBOURG | 1 | 0.800 | 0.800 |
| 18 | 26 | W3 | VIKING | 1 | 0.675 | 0.675 |
| | | | MANNVILLE | 1 | 0.830 | 0.830 |
| | | | MADISON (UNDIFF) | 1 | 0.870 | 0.870 |
| 24 | 26 | W3 | VIKING | 2 | 0.320 - 0.455 | 0.388 |
| 25 | 26 | W3 | VIKING | 3 | 0.450 - 0.525 | 0.480 |
| 28 | 26 | W3 | MANNVILLE | 1 | 0.495 | 0.495 |
| | | | BIRDBEAR | 1 | 0.257 | 0.257 |
| 29 | 26 | W3 | VIKING | 1 | 0.343 | 0.343 |
| | | | BAKKEN | 1 | 0.380 | 0.380 |
| | | | BIRDBEAR | 1 | 0.286 | 0.286 |
| 30 | 26 | W3 | BAKKEN | 2 | 0.371 - 0.424 | 0.398 |
| 31 | 26 | W3 | MANNVILLE | 4 | 0.170 - 0.365 | 0.298 |
| | | | BAKKEN | 2 | 0.342 - 0.350 | 0.346 |
| | | | BIRDBEAR | 1 | 0.164 | 0.164 |
| 32 | 26 | W3 | MANNVILLE | 1 | 0.360 | 0.360 |
| 33 | 26 | W3 | MANNVILLE | 2 | 0.303 - 0.332 | 0.318 |
| | | | BAKKEN | 1 | 0.350 | 0.350 |
| 35 | 26 | W3 | MANNVILLE | 6 | 0.315 - 0.451 | 0.354 |
| | | | BAKKEN | 1 | 0.350 | 0.350 |
| 36 | 26 | W3 | MANNVILLE | 6 | 0.322 - 0.617 | 0.443 |
| | | | BAKKEN | 1 | 0.500 | 0.500 |
| 37 | 26 | W3 | MANNVILLE | 3 | 0.280 - 0.365 | 0.324 |
| 39 | 26 | W3 | MANNVILLE | 4 | 0.127 - 0.258 | 0.191 |
| 40 | 26 | W3 | MANNVILLE | 4 | 0.201 - 0.348 | 0.239 |
| 41 | 26 | W3 | DUPEROW | 1 | 0.152 | 0.152 |
| 42 | 26 | W3 | MANNVILLE | 4 | 0.222 - 0.365 | 0.278 |
| 44 | 26 | W3 | MANNVILLE | 20 | 0.098 - 0.133 | 0.116 |
| 45 | 26 | W3 | MANNVILLE | 1 | 0.183 | 0.183 |
| 46 | 26 | W3 | MANNVILLE | 15 | 0.085 - 0.492 | 0.177 |
| 47 | 26 | W3 | MANNVILLE | 7 | 0.104 - 0.393 | 0.201 |
| 49 | 26 | W3 | DINA | 2 | 0.153 - 0.180 | 0.167 |
| 50 | 26 | W3 | RIBSTONE CREEK | 1 | 5.060 | 5.060 |
| | | | SPARKY | 2 | 0.094 - 0.101 | 0.098 |

## RESISTIVITY OF FORMATION WATERS @ 20°C

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 53 | 26 | W3 | COLONY | 1 | 0.200 | 0.200 |
| 54 | 26 | W3 | MANNVILLE | 2 | 0.129 - 0.246 | 0.188 |
| | | | COLONY | 1 | 0.196 | 0.196 |
| | | | DUPEROW | 1 | 0.216 | 0.216 |
| | | | SOURIS RIVER | 4 | 0.077 - 0.295 | 0.220 |
| | | | SOURIS RIVER-DAWSON BAY | 1 | 0.062 | 0.062 |
| | | | WINNIPEGOSIS | 1 | 0.051 | 0.051 |
| | | | WINNIPEGOSIS-ASHERN-MEADOW LAKE | 1 | 0.051 | 0.051 |
| | | | RED RIVER | 1 | 0.051 | 0.051 |
| | | | DEADWOOD | 2 | 0.051 | 0.051 |
| 55 | 26 | W3 | SOURIS RIVER | 1 | 0.160 | 0.160 |
| 58 | 26 | W3 | SOURIS RIVER | 1 | 0.162 | 0.162 |
| 62 | 26 | W3 | COLONY | 1 | 0.660 | 0.660 |
| | | | CUMMINGS-DINA | 1 | 1.520 | 1.520 |
| 64 | 26 | W3 | MANNVILLE | 2 | 4.600 - 5.000 | 4.800 |
| 65 | 26 | W3 | MANNVILLE | 1 | 2.040 | 2.040 |
| | | | WINNIPEGOSIS | 1 | 0.048 | 0.048 |
| 79 | 26 | W3 | WINNIPEGOSIS | 1 | 0.179 | 0.179 |
| 2 | 27 | W3 | MILK RIVER | 1 | 0.523 | 0.523 |
| | | | UPPER SHAUNAVON | 1 | 1.550 | 1.550 |
| | | | LOWER GRAVELBOURG | 1 | 1.340 | 1.340 |
| | | | MADISON (UNDIFF) | 2 | 1.425 - 2.000 | 1.713 |
| 3 | 27 | W3 | UPPER SHAUNAVON | 1 | 1.030 | 1.030 |
| | | | UPPER-LOWER SHAUNAVON | 1 | 1.400 | 1.400 |
| | | | MADISON (UNDIFF) | 3 | 0.620 - 1.120 | 0.850 |
| | | | DUPEROW | 1 | 0.940 | 0.940 |
| 5 | 27 | W3 | UPPER SHAUNAVON | 2 | 0.810 - 0.955 | 0.883 |
| | | | DUPEROW | 2 | 0.064 - 0.320 | 0.192 |
| 6 | 27 | W3 | MILK RIVER | 2 | 0.640 - 1.700 | 1.170 |
| | | | UPPER SHAUNAVON | 1 | 0.970 | 0.970 |
| 8 | 27 | W3 | MILK RIVER | 2 | 0.425 - 0.560 | 0.493 |
| | | | SECOND WHITE SPECKS | 1 | 0.470 | 0.470 |
| | | | GRAVELBOURG-MADISON | 1 | 0.785 | 0.785 |
| 10 | 27 | W3 | MANNVILLE | 1 | 0.880 | 0.880 |
| | | | UPPER SHAUNAVON | 1 | 1.130 | 1.130 |
| | | | MADISON (UNDIFF) | 1 | 0.625 | 0.625 |
| 11 | 27 | W3 | UPPER SHAUNAVON | 1 | 1.300 | 1.300 |
| | | | MADISON (UNDIFF) | 1 | 0.803 | 0.803 |
| 13 | 27 | W3 | DUPEROW | 1 | 0.069 | 0.069 |
| | | | WINNIPEGOSIS | 1 | 0.047 | 0.047 |
| | | | STONEWALL-STONY MOUNTAIN | 1 | 0.048 | 0.048 |
| 14 | 27 | W3 | VIKING | 1 | 0.950 | 0.950 |
| | | | LOWER SHAUNAVON | 1 | 0.930 | 0.930 |
| | | | DUPEROW | 2 | 0.061 - 0.067 | 0.064 |
| | | | WINNIPEGOSIS | 1 | 0.050 | 0.050 |
| 16 | 27 | W3 | LOWER SHAUNAVON | 1 | 0.860 | 0.860 |
| 18 | 27 | W3 | LOWER SHAUNAVON | 1 | 0.900 | 0.900 |
| | | | GRAVELBOURG | 1 | 0.790 | 0.790 |
| 19 | 27 | W3 | VIKING | 1 | 0.572 | 0.572 |

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 22 | 27 | W3 | VIKING | 1 | 0.556 | 0.556 |
| 25 | 27 | W3 | VIKING | 3 | 0.500 - 0.520 | 0.507 |
| 29 | 27 | W3 | BIRDBEAR | 1 | 0.276 | 0.276 |
| 30 | 27 | W3 | VIKING | 1 | 0.360 | 0.360 |
| | | | DETRITAL | 1 | 0.365 | 0.365 |
| 31 | 27 | W3 | RIBSTONE CREEK | 1 | 0.871 | 0.871 |
| | | | MANNVILLE | 1 | 0.390 | 0.390 |
| | | | BAKKEN | 3 | 0.314 - 0.425 | 0.351 |
| 32 | 27 | W3 | LEA PARK | 1 | 1.320 | 1.320 |
| | | | RIBSTONE CREEK | 1 | 1.920 | 1.920 |
| | | | MANNVILLE | 1 | 0.427 | 0.427 |
| | | | BAKKEN | 6 | 0.268 - 0.410 | 0.323 |
| 33 | 27 | W3 | MANNVILLE | 4 | 0.337 - 0.605 | 0.466 |
| 34 | 27 | W3 | MANNVILLE | 1 | 0.383 | 0.383 |
| | | | BAKKEN | 4 | 0.271 - 0.346 | 0.307 |
| 35 | 27 | W3 | MANNVILLE | 3 | 0.308 - 0.398 | 0.343 |
| 36 | 27 | W3 | MANNVILLE | 1 | 0.393 | 0.393 |
| | | | BAKKEN | 1 | 0.312 | 0.312 |
| 38 | 27 | W3 | MANNVILLE | 2 | 0.197 - 0.290 | 0.244 |
| 39 | 27 | W3 | MANNVILLE | 15 | 0.110 - 0.270 | 0.164 |
| 40 | 27 | W3 | MANNVILLE | 4 | 0.113 - 0.156 | 0.125 |
| 44 | 27 | W3 | MANNVILLE | 3 | 0.100 - 0.168 | 0.124 |
| 45 | 27 | W3 | MANNVILLE | 11 | 0.100 - 0.267 | 0.145 |
| 47 | 27 | W3 | SPARKY | 1 | 0.091 | 0.091 |
| | | | G.P. | 1 | 0.089 | 0.089 |
| 48 | 27 | W3 | RIBSTONE CREEK | 1 | 4.000 | 4.000 |
| 49 | 27 | W3 | SPARKY | 1 | 0.100 | 0.100 |
| 50 | 27 | W3 | SPARKY | 1 | 0.075 | 0.075 |
| 51 | 27 | W3 | MCLAREN | 1 | 0.154 | 0.154 |
| | | | WINNIPEGOSIS-ASHERN-INTERLAKE | 1 | 0.057 | 0.057 |
| 52 | 27 | W3 | MANNVILLE | 4 | 0.102 - 0.215 | 0.132 |
| 53 | 27 | W3 | MANNVILLE | 2 | 0.120 - 0.380 | 0.250 |
| | | | DUPEROW | 1 | 0.380 | 0.380 |
| | | | SOURIS RIVER | 1 | 0.120 | 0.120 |
| 55 | 27 | W3 | MANNVILLE | 2 | 0.137 - 0.300 | 0.219 |
| 1 | 28 | W3 | VIKING | 1 | 1.250 | 1.250 |
| | | | MADISON (UNDIFF) | 1 | 2.520 | 2.520 |
| | | | BIRDBEAR | 1 | 1.080 | 1.080 |
| 2 | 28 | W3 | GRAVELBOURG | 1 | 1.500 | 1.500 |
| 4 | 28 | W3 | UPPER-LOWER SHAUNAVON | 1 | 1.040 | 1.040 |
| 5 | 28 | W3 | VIKING | 1 | 0.920 | 0.920 |
| | | | UPPER SHAUNAVON | 1 | 1.000 | 1.000 |
| 6 | 28 | W3 | VIKING | 1 | 0.938 | 0.938 |
| | | | UPPER SHAUNAVON | 1 | 1.580 | 1.580 |
| | | | LOWER SHAUNAVON | 1 | 1.200 | 1.200 |
| 7 | 28 | W3 | UPPER SHAUNAVON | 1 | 1.520 | 1.520 |

## RESISTIVITY OF FORMATION WATERS @ 20°C

| AREA | | | FORMATION OR HORIZON | NUMBER OF SAMPLES | RANGE OF RESISTIVITIES OHM-METRES | AVERAGE RESISTIVITY OHM-METRES |
|---|---|---|---|---|---|---|
| TWP | RGE | MER | | | | |
| 10 | 28 | W3 | VIKING | 1 | 1.340 | 1.340 |
| 11 | 28 | W3 | MEDICINE HAT | 1 | 0.680 | 0.680 |
| | | | MADISON (UNDIFF) | 1 | 0.850 | 0.850 |
| 12 | 28 | W3 | MEDICINE HAT | 3 | 0.530 - 0.570 | 0.557 |
| 18 | 28 | W3 | DUPEROW | 3 | 0.110 - 0.160 | 0.135 |
| | | | DEADWOOD | 2 | 0.200 - 0.420 | 0.310 |
| 19 | 28 | W3 | JURASSIC-MADISON (UNDIFF) | 1 | 0.600 | 0.600 |
| 22 | 28 | W3 | BAKKEN | 1 | 0.548 | 0.548 |
| | | | DUPEROW | 1 | 0.063 | 0.063 |
| 23 | 28 | W3 | VIKING | 1 | 0.535 | 0.535 |
| | | | BAKKEN | 1 | 1.040 | 1.040 |
| 25 | 28 | W3 | VIKING | 2 | 0.450 - 0.560 | 0.505 |
| 28 | 28 | W3 | VIKING | 1 | 0.320 | 0.320 |
| 30 | 28 | W3 | BAKKEN | 1 | 0.425 | 0.425 |
| 31 | 28 | W3 | MANNVILLE | 1 | 0.355 | 0.355 |
| 32 | 28 | W3 | MANNVILLE | 9 | 0.319 - 0.457 | 0.358 |
| | | | BAKKEN | 3 | 0.320 - 0.570 | 0.407 |
| 33 | 28 | W3 | MANNVILLE | 1 | 0.400 | 0.400 |
| | | | BAKKEN | 1 | 0.336 | 0.336 |
| 34 | 28 | W3 | MANNVILLE | 5 | 0.339 - 0.510 | 0.395 |
| | | | BAKKEN | 1 | 0.376 | 0.376 |
| 35 | 28 | W3 | MANNVILLE | 5 | 0.170 - 0.616 | 0.366 |
| | | | BAKKEN | 1 | 0.312 | 0.312 |
| 36 | 28 | W3 | MANNVILLE | 8 | 0.296 - 0.492 | 0.341 |
| 37 | 28 | W3 | MANNVILLE | 1 | 0.190 | 0.190 |
| 38 | 28 | W3 | MANNVILLE | 1 | 0.260 | 0.260 |
| 39 | 28 | W3 | MANNVILLE | 7 | 0.130 - 0.168 | 0.145 |
| 42 | 28 | W3 | MANNVILLE | 2 | 0.095 - 0.500 | 0.298 |
| 43 | 28 | W3 | SPARKY | 1 | 0.097 | 0.097 |
| 44 | 28 | W3 | SPARKY | 1 | 0.147 | 0.147 |
| 1 | 29 | W3 | VIKING | 1 | 1.580 | 1.580 |
| | | | BIRDBEAR | 1 | 1.200 | 1.200 |
| 2 | 29 | W3 | MADISON (UNDIFF) | 1 | 1.620 | 1.620 |
| | | | BIRDBEAR | 1 | 0.850 | 0.850 |
| 6 | 29 | W3 | MILK RIVER | 1 | 0.730 | 0.730 |
| | | | GRAVELBOURG | 1 | 1.280 | 1.280 |
| 9 | 29 | W3 | VIKING | 1 | 2.350 | 2.350 |
| | | | UPPER SHAUNAVON | 1 | 1.550 | 1.550 |
| | | | LOWER GRAVELBOURG | 1 | 1.380 | 1.380 |
| 11 | 29 | W3 | VIKING | 2 | 1.050 - 1.120 | 1.085 |
| | | | GRAVELBOURG | 1 | 1.300 | 1.300 |
| 12 | 29 | W3 | MEDICINE HAT | 1 | 0.462 | 0.462 |
| 25 | 29 | W3 | VIKING | 3 | 0.380 - 0.410 | 0.397 |
| | | | DETRITAL | 1 | 0.560 | 0.560 |
| | | | BAKKEN | 1 | 0.465 | 0.465 |
| 27 | 29 | W3 | VIKING | 1 | 0.280 | 0.280 |
| 32 | 29 | W3 | MANNVILLE | 1 | 0.345 | 0.345 |
| 37 | 29 | W3 | MANNVILLE | 2 | 0.233 - 0.342 | 0.288 |
| 13 | 30 | W3 | MEDICINE HAT | 1 | 0.520 | 0.520 |
| | | | VIKING | 1 | 0.840 | 0.840 |

**Saskatchewan**
**Energy and Mines**

**ISSN 0707-2562**

### Petroleum and Natural Gas Division

1914 Hamilton Street
Regina, Canada
S4P 4V4
**Executive Director: B. W. Wilson, P.Eng.**
**Ph. 787-2591**

### Engineering Services Branch

**Director: M. A. Sereda, P.Eng.**
**Ph. 787-2318**

### Petroleum Development Branch

**Director: J. L. Gossard**
**Ph. 787-2593**

### Field Offices

Estevan — 1219 Fifth Street S4A 0Z1
**Officer in Charge: J. M. Wysminity**
**Ph. 634-3671**

Swift Current — 350 Cheadle Street West S9H 4G3
**Officer in Charge: A. R. Dafoe**
**Ph. 773-4213**

Kindersley — Box 850 S0l 1S0
**Officer in Charge: L. W. Mahaffey**
**Ph. 463-2523**

Lloydminster — 4815-50th Street S9V 0M8
**Officer in Charge: B. Mathieson**
**Ph. (403) 825-8977**